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Railway Age

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SIXTY-SIXTH YEAR

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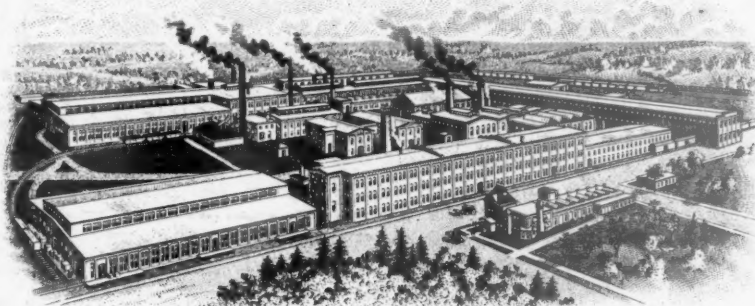
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EDITORIAL

Railway Age

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When the recession in business activity commenced several months ago the automobile industry was one of the first to feel the effects. In view of this, there

An Opportunity To Regain Lost Traffic

is special significance in the fact that the demand for automobile cars was well sustained, even after a large surplus of other types had developed. If the supply of such equipment is hardly adequate during a depression, there is every reason to believe that a serious shortage can be anticipated when business again assumes normal proportions. During the war the railroads lost a large amount of this high grade traffic through inability to handle it. Automobiles were sent under their own power for distances up to 1,000 miles from the factories. The cost of furnishing drivers is much greater than the freight charges and manufacturers will not continue this expensive practice unless they are forced to do so. Automobile traffic not only carries a fairly high freight rate, but on many roads it would also provide a back haul to balance merchandise traffic. The special features of automobile cars do not add materially to the cost of construction nor to the expense of maintenance. Practically all commodities, including grain, can be carried with entire success in cars of this type and they are more adaptable traffic units than box cars. For this reason, the roads when ordering new equipment should provide enough automobile cars to meet the demands of the maximum traffic.

The exports of railway equipment and supplies from Great Britain in 1920, the totals of which have recently been made

British Supply Exports Increasing

public, afford concrete evidence of the strenuous and far from unsuccessful efforts of British supply manufacturers to regain their foothold in the markets which during and immediately following the war depended to a large extent upon American industry. Shipments of locomotives during the year were valued at \$23,949,576 (at the present rate of exchange), a figure more than three times as great as the similar total for 1919. At the same time exports of locomotives from this country in 1920 showed an increase in value of about 75 per cent over 1919. In the matter of steel rails, the exports from the United States in 1920 actually declined from the totals of the previous year, while British manufacturers increased their foreign sales by more than 25 per cent. The value of passenger cars exported from Great Britain in 1919 was \$2,377,408 and, in 1920, \$6,780,028. Similar figures for the United States are \$1,606,540 and \$1,171,674 respectively. These figures speak for themselves. In the value of freight car exports, British manufacturers increased their business from \$9,496,568 to \$22,838,844 in the course of the year. These figures, which are given in detail elsewhere in this issue, do more than indicate a condition as it existed at a particular time; they show a trend and that trend is away from American manufacturers and American goods, and toward foreign competitors and their products. One of the strongest factors militating against American goods in foreign markets is the unfavorable exchange rate. The efforts of those who are planning to solve this problem by arranging to extend long term credits to foreign purchasers,

consequently, deserve the whole hearted support of everyone. The opening up of a brisk export trade at the present time would be of tremendous assistance in restoring normal business conditions in this country.

For many years, with only one exception, we believe, the manufacturers of railway equipment and supplies have made

Convention of the Mechanical Section

exhibits in connection with conventions of the railway mechanical associations. Because of bad business conditions the Railway Supply Manufacturers' Association, through which these exhibits are made, is seriously considering not making an exhibit this year. Its executive committee met this week and before this editorial is published a decision upon the question of giving the exhibit probably will be reached. Whether the exhibit is given or not, the conventions of the Mechanical Section and of the Purchases and Stores Section of the American Railway Association ought to be and doubtless will be held. There never was a time when the mechanical officers of the railways were confronted with more important and difficult problems than now. Many of these problems demand associated action by the railways, and all of them need thorough discussion. A decision in the interest of economy not to give the exhibit of equipment and supplies would be in keeping with the conditions and spirit of the present period. These very same conditions, however, demand that the various sections of the American Railway Association shall meet and transact the business assigned to them. There is need for the greatest practicable economy in the operation of the railways, but with the conditions confronting the roads at the present time it would be false economy for them to save the comparatively small amount that would be saved by not holding these conventions this year. The savings which will be made if the various sections of the American Railway Association meet and transact the business that they should, will be vastly larger than the amounts that would be saved by not holding the conventions.

The hearing on the Reading segregation plan held at Philadelphia on March 1 brought out many interesting points, not

Central of New Jersey

the least interesting of which were those relating to that part of the plan dealing with the disposition of the majority stock of the Central of New Jersey now owned by the Reading Company. The Reading in its plan asked the court to postpone action in this matter pending the grouping of the railroads by the Interstate Commerce Commission under the terms of the Transportation Act. Comment has already been made in these columns concerning the government's objection to such postponement and the opinion was expressed that the government's attorney was not acting according to the intent of the people as expressed in the Transportation Act. Nor are we made to feel otherwise by the government's contention that the Supreme Court's decision was handed down after the passage of that act. The attorney for the Reading brought out at the hearing that to require the Reading to dispose of

the Central of New Jersey stock at this time is a much more serious affair than might at first be supposed. The argument was advanced that to require the Reading to sell the Jersey Central stock now or in the immediate future would be an actual hardship and the Reading attorney asked the mercy of the court not to require such sale. The Interstate Commerce Commission is now working out its plan for railroad consolidations. No one knows what disposition the plan may finally make of the Central of New Jersey. In other words, with that in mind, no other carrier would be justified in purchasing the stock because that carrier would not be in a position to know whether such purchase would be approved. The result would be that there would be no market for the stock and it would have to be disposed of at a great sacrifice. The situation is further complicated, the attorney pointed out, by the fact that the Reading has pledged its Jersey Central stock to the par value of \$14,000,000 under bonds amounting to \$23,000,000 which bonds may not be redeemed under 105. It is hard to believe that the Supreme Court wants such action as this taken and we repeat that we do not see how there can be any objection from the point of view of the law in a postponement of the sale of the stock until the consolidation plan is finally determined as provided in the Transportation Act. The tendency today is toward consolidation and the public approves of it. No argument is needed to show that the Jersey Central is a natural adjunct to the Reading in giving it entrance into the big railroad center of New York. It is difficult to agree with the government's contention in this aspect of the case; we feel that its objection to the postponement of the sale of the Jersey Central stock represents retrogression rather than progress.

The *Railway Age* apologizes to its readers for an erroneous statement regarding loss and damage which was made in

**Correction
of a
Mistake**

our last week's issue. This statement indicated loss and damage on American railroads for the year 1920 amounted to \$280,000,000. Detailed figures for the year 1920 are not yet available. In 1919 payments for loss and damage of all kinds, including damage to property, loss to live stock on right of way and in transit, loss and damage to freight and baggage and injuries to persons, amounted to \$156,275,579. Of this amount \$106,804,861 was chargeable to loss and damage of freight. What we meant to do was to give an estimate for 1920, and in making the estimate a miscalculation was made which resulted in the total estimate being about \$100,000,000 too large. Even when correctly stated, however, the figures for loss and damage are quite large enough. No other part of operating expenses affords opportunity for relatively so great a real saving.

We publish elsewhere in this issue a paper entitled "The Spirit of Safety First" which was prepared by Charles E.

**"The Spirit
of
Safety First"**

Norman, a switchman on the Chicago & Alton, and read by him at a recent safety meeting of employees of this railroad in Chicago. The principal reason why we publish and call attention to it is that it is an excellent and very human discussion of the problem of safety on railroads. It emphasizes the means by which safety may be promoted, the direct and indirect advantages to the employee and his family, and the fact that "safety first goes beyond the conservation of life and limb—it brings out efficiency, economy and co-operation." Mr. Norman has stated the philosophy and purpose of safety work in a few sentences. The paper is all the more interesting because it was prepared not by some railway

officer specializing upon safety work, but by a switchman whose everyday life brings before him constantly the hazards of railway employment. It bespeaks not only the right attitude toward his work and toward his fellow employee, but also toward the general operation of the railroad. While controversies always will occur between railways and their employees regarding wages and conditions of work, it is a great mistake to assume that these things indicate any want of an adequate sense of duty and responsibility on the part of a large majority of employees. It is easy to criticize railway employees and their unions, and they give much justification for criticism, but it would be impossible to find among any class of workingmen in the world a better spirit or more intelligence than can be found among the railway employees of this country as a whole, and especially among those directly concerned with the operation of trains.

The report on determining the cost of reproduction new of all-steel freight cars, which is abstracted on another page of

**Cost of
Freight
Cars**

this issue, is another important contribution to the subject of railway equipment valuation. Like an earlier report of the equipment committee of the Presidents' Conference Committee on Federal Valuation—the report relating to the cost of reproduction new of locomotives, which was abstracted in the *Railway Age* of September 3, 1920—the present report represents the results of detailed study and scientific analysis. The equipment committee has worked out a method characterized by simplicity; it is similar to that which was utilized for determining the cost of locomotives. It permits the determination of the cost of reproduction new of a steel freight car on the basis of its weight, multiplied by the cost per pound, with proper additions in the form of net prices for the specialties. In working out this plan the committee had the advantage of the assistance of two of the larger car builders. Its figures for the period 1910 to 1914, inclusive, are based on the prices of no less than 71,108 cars of the four types considered—hopper, gondola, coke and tank. The report is further of interest in that there is worked out a price relationship of the year 1910 to the first half of 1920 in the form of percentages of the 1910 to 1914 average price as 100. As we have noted in these columns before, this is something concerning which there has been a great deal of surmise but until this investigation little of authoritative value. The *Railway Age* in abstracting the report has given it considerable space, which is fully justified by the importance and value of the investigation upon which the report is based. The report has much use from other than valuation viewpoints. Mechanical officers, in particular, are often called upon to figure the prices of old equipment. They now have as valuable assistants in such work the report on the cost of reproduction new of locomotives and that on all-steel freight cars. The reports on wooden and composite freight cars, as well as those on passenger cars, will probably be available shortly.

The vital importance of adequately trained foremen in any attempt to reduce transportation costs was one of the keynotes

**Foremen
Hold a Strategic
Position**

of the recent address by George M. Basford before the Western Railway Club, reported in the *Railway Age* of February 25. A forceful simile used in the address, and one which will appeal particularly to those familiar with army organization, was the quotation, "the foreman is the top sergeant of industry." Foremen must not be mere time servers, or men selected solely for their ability as master craftsmen. They should be

executives who can understand and direct the men in their respective departments, outlining the department work and creating a better feeling between the workers and the managements. The ability to visualize the work of other departments also is desirable in order that the efforts of all may be co-ordinated for the single purpose; namely, maximum transportation at minimum cost. Foremen with the above qualifications are in direct line for promotion and with enough of these men carefully trained, no railroad need call in outsiders to fill executive positions. What is the conclusion when "an important department of one of our fine big railroads has not once in twenty years been presided over by an officer who grew up on that road and in that department?" The conclusion is that a large majority of the foremen are not adequately trained and encouraged to qualify for higher positions. Why should foremen and men strive for advancement when they see the high positions being filled by strangers? As has been emphasized many times in these columns, it is important to make the position of foreman attractive and worth striving for. Under the piece work system, a knockout blow was struck at the efficiency and morale of railroad foremen when they were allowed to make less pay than some of the men working under their direction. Hardly a more important problem confronts the railway managements today than the proper selection, training and support of foremen in all departments. There will always be problems and difficulties in railway operation, but attention to personnel problems in the past would have prevented many of the present difficulties. Experience, therefore, teaches a lesson which should not be forgotten.

Another Coal Crisis on the Way

IF PRESENT TENDENCIES in the production and transportation of coal are not speedily changed the American people within a few months will be confronted with the most serious danger of a coal famine ever known. The production and transportation of bituminous coal have been rapidly declining, and within recent weeks have reached the lowest levels for years, except during the coal strike in November and December, 1919.

It is but two months since the week ended December 11, when the mines produced and the railroads transported 12,865,000 tons of bituminous coal. They are now producing and transporting only 7,300,000 tons weekly, a decline of 43 per cent. It is but a few months since the railways were being generally denounced because they could not haul all the coal the country needed. Today 175,000 coal cars are standing idle because consumers and dealers are not buying and the mines are not producing coal with which to load them.

The situation demands the immediate attention of coal consumers, dealers and operators, railway officers and the Interstate Commerce Commission. There has been a plethora of propaganda in the past because the railroads could not handle enough coal when people wanted it. There is need to make all concerned understand now that if the railways are not soon given opportunity to haul more coal, the coal situation developing will be far more acute than any previously experienced.

The only time within recent years, except during the miners' strike, when the production and transportation of coal were anywhere near so small as they are now was early in 1919. The situation now, however, is much more threatening than then. Not only is less coal being produced than then, but the country entered the year 1919 with a storage supply of about 58,000,000 tons, the largest amount ever on hand at the beginning of a year, while it entered the year 1921 with comparatively small storage supplies.

The production of coal continued to be small throughout the first half of 1919. Everybody knows the sequel. The storage supplies were almost exhausted. Business suddenly revived, and with it the demand for coal. The railways were unable to transport it as fast as it was wanted and could be produced, and a howl went up all over the country that there was danger of a coal famine and that the railroads were to blame. In November, 1919, came the strike in the coal mines, which was followed by a coal shortage of several months' duration, due not only to the strike but to the small production in the early part of 1919. The railways throughout 1920 had to make herculean exertions to get enough coal to the northwest to keep it from freezing and enough to New England and other parts of the country to keep their industries going. Priority had to be given to the use of open top cars for the transportation of coal, with the result that many business activities, especially building and highway construction, had to be practically stopped.

We are moving toward a repetition of this experience, but in a more serious form and with more serious consequences. The annual average consumption of coal in this country for four years has been 535,000,000 tons, or more than 10,000,000 tons a week. The reduction of consumption owing to mild weather and industrial depression has been large, but far from sufficient to justify a reduction of production to 7,300,000 tons a week.

The main reason for this reduction, as shown by the reports of the United States Geological Survey, is "no market." Consumers and dealers won't buy. Probably the main reason they won't buy is the present prices. They are lower than those of a few months ago, but still high. The main reason they stay so high is the excessive wages being paid to the miners. In the two years March 31, 1918, to March 31, 1920, the mine workers in the Central Competitive Field were given five advances. This field embraces Pennsylvania, Ohio, Illinois, Indiana and the southwest, and has set the pace for the country. Repeatedly wage scales were made to remain in effect for specified periods and advances granted before these periods had expired because the mine workers refused to abide by their contracts.

The advance in the daily wage rate between 1918 and 1920 was from \$3.00 to \$7.50, or 150 per cent. Many consumers and dealers are not buying because they expect coal prices to be further reduced and believe they should be. Because of this buyers' strike, hundreds of thousands of miners are unemployed, a large part of all the coal cars are idle, and the country is drifting toward a serious crisis.

The present wage scale was adopted to stay in effect until April 1, 1922. Since the miners in the past have repeatedly demanded and secured advances in wages before contract periods have expired, there is no reason why the mine operators should not demand and secure a reduction of wages before the present contract period expires. The entire industry of the country is suffering from the present prices of coal. This is especially true of the railroads. They consume one-third of all the coal produced. Their fuel bills now amount to about \$750,000,000 a year. One of the principal reasons for their present high operating expenses is the excessive cost of coal. The question whether there is to be any reduction of miners' wages and consequent further reduction of the price of coal this year should be settled as soon as possible so as to reduce the length of the buyers' strike.

In every year for four years the transportation and business of the country have been demoralized by demands that the railroads should in certain periods to prevent a coal shortage handle more coal than they are physically capable of handling. The railroads and the Interstate Commerce Commission should definitely announce at an early date in terms leaving no possibility of misunderstanding, that no priority will be given to coal this year, no matter what may

become the alleged necessities of coal producers and consumers, or of those of any section. The railroads can transport all the coal the country needs if given opportunity to handle it in reasonably uniform volume, and if the stupidity and selfishness of the coal producers, dealers and consumers which have caused one coal crisis after another cause another this year, their stupidity and selfishness should be allowed to produce their natural results. The railroads should cease to be made the "goat" for these coal crises.

Meantime, where are the construction concerns which made such a howl last summer when, owing to priority being given to coal, they could not get enough cars to ship materials? Why are not they "shipping early" in some of the 175,000 open top cars now standing idle? A few months ago when the railways were moving the largest volume of freight ever handled, many people were charging they had "broken down" because they did not move more. Now, when over one-third of the railroad capacity of the country is idle, many people are saying private operation has "broken down" because with this enormously reduced traffic the railways are facing a financial crisis. The most varied and bitter experience does not seem to teach the American people anything regarding transportation matters.

What Kind of a Railroad Are You Trying to Make?

NO GREAT THING ever was done by any man or group of men who did not consciously have an ideal and work steadily and powerfully to attain it. "Where there is no vision, the people perish." The great railroad systems of the United States have been developed by men, or groups of men, who knew what kinds of railroads they were trying to create, and consciously and steadily used the best means available for accomplishing their purposes. They had enormous difficulties to overcome. They encountered obstacles and enemies at every step. They had failures behind them that they could look back to, as well as successes ahead of them that they hoped for. In the long run they won. The present great railroad systems prove that. They are monuments to the courage, vision, energy, resolution and resourcefulness of men such as Commodore Vanderbilt, Thomas A. Scott, A. J. Cassatt, James J. Hill, E. H. Harriman, E. P. Ripley, Milton H. Smith and others.

The great railroad men of the generations to which these men belonged had the advantage of doing most of their work before government regulation and government operation intervened. In making and carrying out their plans they hardly had to think about interference from public authorities, and very little about co-operation with the managers of other railroads. When they thought of other railroads they usually thought of them in terms of competition, not co-operation. They did not trouble themselves much about what their employees were going to think. Most of their employees were not organized, and the unions that did exist were small and weak compared with those that exist at present.

Government regulation, growth of labor organizations and other changes in conditions make it necessary for a man or group of men now engaged in developing and operating a railroad to consider many things their predecessors did not have to consider. But in the most important respect of all there has been no change. It is just as important now as ever that the head of a railroad and his principal officers should have a definite ideal of the kind of a railroad they are trying to make, and definite means for making this kind of a railroad and should work constantly with indomitable resolution and perseverance in carrying out their plans. Only in this way can they make railroad systems which will

be physically sound and well rounded, and which will produce good operating and financial results.

There are those who will contend that present conditions are so unfavorable as to render it impracticable to form definite ideals of what kind of railroads they are going to make and to adopt and successfully carry out plans for making them. But there were people who thought and talked that way when James J. Hill started to build the Great Northern to the Pacific coast. There were others who thought E. H. Harriman had undertaken a task beyond human power when he started to rehabilitate and reconstruct the Union Pacific. There were even those who thought at certain stages of Mr. Hill's and Mr. Harriman's careers that they were not perfectly sound mentally. They were subsequently enlightened by the discovery that if there was anybody insane it wasn't Mr. Hill or Mr. Harriman.

The year 1921 is not the first when conditions were unfavorable in this country to developing railways and making them pay. It is not the first when many of the railroads were on the verge of bankruptcy. After the panics of 1873 and 1893 many of the predecessors of the present generation of railway officers either changed unfavorable conditions, or adapted their methods to them. They didn't change their ideals, or refuse to have any. All the railway officers of that period did not achieve their ideals. Many were discouraged by conditions and gave up or lost the fight. Their names can be found in large numbers by searching in Poor's Manual; but they do not appear in any histories of the period. On the other hand, there were those who never forgot their ideals and never quit, no matter how discouraged they may have been at times. The great railroad systems of this country are monuments to men who talked less about what had been done to them and their railroads than they did about what they and their railroads were going to do and who didn't quit. Their names can be found in many histories.

Private management of railroads in the United States is on trial. This is not the first time it has been on trial. It may be the last time unless the railway leaders of this generation squarely and fully meet the test. They were put to a severe test last year. It looked for awhile as if they were not going to meet it. They were called on to move the largest freight business in history with deteriorated facilities, with serious strikes on their hands and without any organization to bring about needed co-ordination in their operation. They showed at first a disposition to pull apart instead of pulling together. They waked up in time, however, organized themselves, gave the finest example of railroad team work ever seen, moved more freight than had ever been handled in the same length of time, and almost wiped out the car shortage before the slump in business began.

They are confronted today with a situation more perilous than that. They need courage, energy, breadth of vision, unity of purpose and foresight, to meet it. They are displaying a want of unity of thought and purpose regarding certain most important matters that demand unity of thought and action. We have no doubt, however, that private operation will pull through the present crisis. But the country is getting tired of transportation crises. It is up to the railroad managers not only to pull the railroads through this crisis, but to adopt measures for preventing future crises.

They must develop more unity of thought and purpose in dealing with their labor problem and with public opinion. But the future of the railroads is mainly in the hands of their individual managements. If each railroad could and would solve its own problems, there soon would hardly be any national railroad problem. Solution of the problems of each individual railroad demands that it shall individually establish better relations between it and its own public and its own employees. This will not be done until the chief executives and principal officers of each railroad have a

definite ideal as to what kind of a railroad they intend to make, definite plans for making it and indomitable resolution in carrying them out.

The prime requisite to the solution of the railroad problem under private ownership is the development and operation of each railroad so that under the particular conditions to which it is subject it can render the best practicable service at the lowest practicable cost. Without success in this there will be no success. The railroad manager who has such an ideal and such plans must, under present conditions "sell" them to his public and his employees, as well as to the financiers. But he cannot "sell" them to anybody else if he does not first sell them to himself so that he really believes in them. Once he has sold them to his public and his employees he will get the support of his public and his employees, and they will help change the most unfavorable conditions with which the railroads are now confronted.

The thing has been done in the past. It is being done by some railroad managers now, as bad as conditions are. They have ideals. They know what they are trying to do and how they are trying to do it. By taking their public and their employees into their confidence they are getting their support and making progress.

The Accident at Porter, Indiana

ON SUNDAY EVENING, February 27, a New York Central passenger train crashed into a Michigan Central passenger train at an interlocked crossing of these lines at Porter, Ind., resulting in the death of 37 people. It would seem at times that human toll is a necessary part of railroad operation. However, even this high penalty may be warranted if the lessons learned from such accidents are applied to remedying conditions so that similar accidents may not occur in the future.

Practically every precaution of modern signaling had been taken to protect trains at this busy grade crossing. Derails were placed ahead of the home signals as a means of enforcing a stop if an engineman should fail to heed the signals. Electric locks were placed on the interlocking machine as an additional check on the mechanical locking, these locks with their control circuits so arranged that when a route was lined up for a train on one road it was locked electrically for that train and could not be released until that train had passed unless the leverman had again placed his signals at the stop position and released himself by means of a time release. The operation of this release required a predetermined time in order to insure that a train which might have accepted the route had either been brought to a stop at the home signal or had passed over the plant. This added precaution was deemed necessary to prevent a leverman, in a moment of confusion, from throwing a derail in front of a train. Yet, in spite of all these precautions two fast passenger trains collided on the crossing through no fault of the mechanical and electrical equipment which had been designed to prevent just such accidents and through no fault of the men operating the plant.

What, then, was the cause of the accident and what lessons may be learned as a result of it?

Analyzing the conditions, three factors are seen to enter into the cause of the accident, (1) a "man failure" on the part of the engineman and fireman on the Michigan Central train; (2) a derail located too near the crossing and (3) a train order signal so located with respect to the home signal that there was a possibility of its light being confused with a clear home signal indication.

Treating each in order: The engine crew failed to see the red light on the home signal and may have mistaken the green light on the train order signal for the home signal indi-

cation, as the smoke of a train standing on a siding near the home signal may have obscured its light momentarily. No one will question the fact that the engine crew believed they had a clear signal as it would be suicidal on their part to run past a stop signal at a high rate of speed knowing that there was an open derail ahead.

The derail, which was of the split point type, was 311 ft. from the nearest crossing frog, with a trailing point switch located about midway between the derail and the crossing. Here, then, the effective distance of the derail might be only about 165 ft. as the trailing switch would have a tendency to derail an engine or cars.

The train order signal was in line with the interlocking signal when viewed on the tangent track, although the indications ought not to have been confused by the engineman of a train approaching around the curve which lies between the distant and the home signal at this particular point.

As a result of this accident it is evident that many derails in high speed routes should be moved back to meet present operating conditions. Thirty years ago a distance of 300 ft. was deemed sufficient but since that date heavier and more powerful motive power has come into use and train speeds have increased while the derail has not been moved back to keep pace with this development.

The train order signal is but little used in automatic signal territory where railroads make proper use of their signal systems. Provisions should be made at interlocking plants to interlock with the home signals or other steps should be taken to remove the possibility of its light being mistaken for the home signal indication. There are many places throughout the country where such an indication may be so mistaken today.

"Man failure" was the primary cause of the accident. The best signaling and interlocking apparatus did not in this case, as in many others, prevent the man failure from resulting in a great catastrophe. There is good reason to believe that an automatic train control or train stop would have prevented this accident as well as a large number of others such as at Ivanhoe, Amherst, Corning, Mount Union and South Byron. When it is considered that automatic block signals on many lines are located only about one mile apart and that an engineman on a fast passenger train may pass a signal on an average of every 50 sec. it is not to be wondered at that "man failures" sometimes occur. This accident, like many others that preceded it, pointedly and seriously raises the question whether it is not time to supplement the signal system with train control on lines where it is necessary to maintain high speed schedules under all weather and operating conditions.

Pennsylvania Railroad

CONSIDERING THE SIZE of the Pennsylvania Railroad, the amount of traffic carried over its rails and the varied nature of that traffic, it is natural that there should be plainly reflected in the operations of the system those features which characterize the operations of the railways of the country as a whole. The Pennsylvania Railroad, of course, has problems of its own, as has any railroad, but it constitutes so large a proportion of the country's total railway mileage that, speaking generally, it can be said that to analyze its present difficulties is to analyze those of all the railroads.

The Pennsylvania Railroad Company, the parent company of the system and itself operating 7,425 miles of railway, in 1920 had a total compensation and net operating income of \$63,103,867, including compensation of \$13,156,968 for January and February when the road was still under federal control; the guaranteed return of \$37,981,814 for the six months from March 1 to August 31 and net operating income

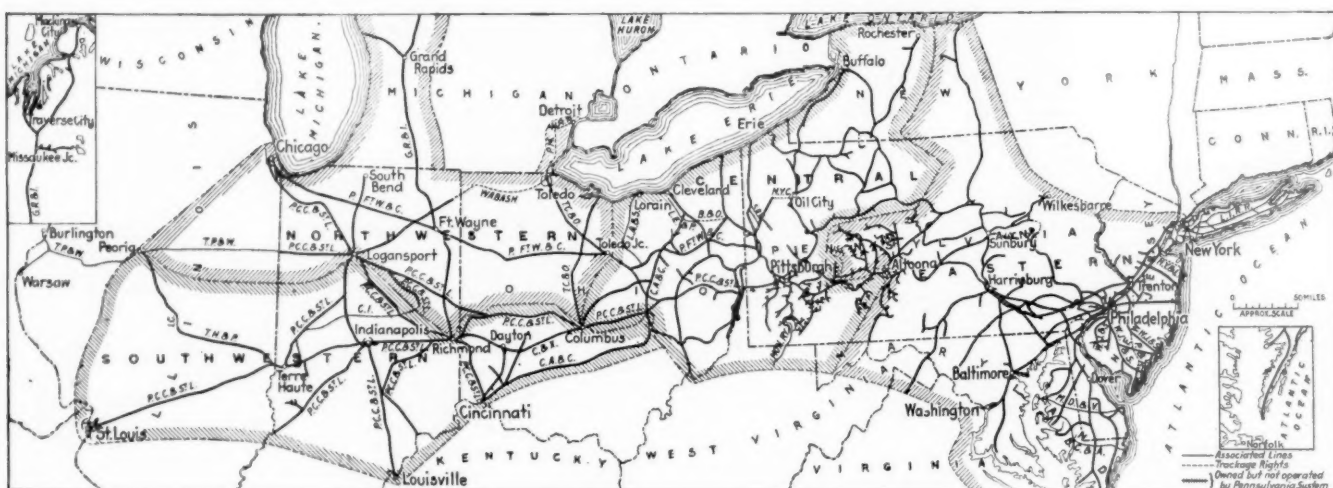
of \$11,965,085 for the four months from September 1 to the end of the year. This total of \$63,103,867 was \$4,022,596 less than the compensation in 1919. The company's non-operating income was \$24,562,834, an increase of \$671,072 over 1919. The gross income totaled \$87,666,701. Deduction from gross income totaled \$54,865,028, an increase of \$5,372,757 over 1919, represented in the main by increased interest payments on funded and unfunded debt. The net income for the year was \$32,801,673, a decrease of no less than \$10,066,425 from 1919. The six per cent dividends amounted to \$29,950,404 and \$2,239,790 was applied to sinking and other reserve funds. The balance transferred to profit and loss—namely \$611,479—was \$9,889,238 less than in 1919.

It is interesting that although the Pennsylvania is our largest railroad system and its operations among the most complex, it is the first of all the railroads to issue its annual report. This is caused by the necessity of having the report ready for the annual meeting of the stockholders on the second Tuesday in March. The result is that the report does not include the figures for operation and maintenance, which will explain the omission of any reference to such figures in the present review. These figures, however, will be issued later

operations of the Pennsylvania Railroad during the year 1920.

The Pennsylvania Railroad on its return to private control on March 1, 1920, introduced a new form of organization whereby the road was divided into four regions, each in charge of a vice-president. In reviewing the results of the year's operations it would be natural to see how this new form of organization has worked out. The many unusual conditions existing in 1920, however, have made this difficult, and President Rea does not attempt it in his report. That it has enabled improvements to be made is, however, well known. It is the consensus of opinion that the morale of the forces on the Pennsylvania is improving from month to month. The officers of the road realize the extreme importance of this morale and regret only that the present uncertain labor situation on the railways as a whole prevents more rapid progress toward restoring the old time efficiency and favorable attitude on the part of the men towards their jobs and towards the railroad by which they are employed.

The stockholders on March 8 voted on a number of things which are of leading importance to the progress of the Pennsylvania System. One of these was a proposal to authorize an increase in the indebtedness of the company by \$100,000,000 to provide for future financing. The other relates to



The Pennsylvania System

as soon as they become available. The stockholders voted on March 8 to change the date of the annual meeting to the second Tuesday in April so as to give more time for the preparation of the voluminous information which the Pennsylvania makes available for those interested in the details of its operation. The omission of these operating statistics from the present report does not, however, rob the report of value. There are so many things considered in its pages that it is of more than ordinary interest.

The Pennsylvania Railroad System prior to the advent of federal control, was noted for its splendid organization and the excellent morale of its forces. It was also noted for its engineering characteristics and its excellent up-keep. No doubt the extremely high standards of the latter had their effect upon morale and made it something more real and tangible. At any rate it would be almost trite to say that the 26 months of federal control added nothing to these things and subtracted much. The Pennsylvania Railroad today does not have that new and finished appearance it once had and the morale of the forces cannot be said to compare with what it was before the disturbing circumstances of the war had come into play. Organization and morale are most important on any railroad, but on a system the size and complexity of the Pennsylvania they have an unusual importance. These facts must be borne in mind in any analysis of the

leases of certain of the subsidiary lines. The Pennsylvania Railroad System was made up of some 600 constituent transportation corporations. This number has gradually been reduced through acquisition or merger so that at the end of 1919, for instance, there were a total of but 177, including railroad, bridge, real estate, water supply companies, etc. The list of operating companies owned or controlled by or affiliated in interest with the Pennsylvania System in 1920 totaled 20, operating a total of 11,749 miles of line. These companies operate some 50 companies whose properties are under leases or operating agreements. Of the operating companies the largest is the Pennsylvania Railroad itself which operates 7,425 miles of line. There are also included the Pittsburgh, Cincinnati, Chicago & St. Louis, 2,434 miles; the Grand Rapids & Indiana, 562 miles; the New York, Philadelphia & Norfolk, 122 miles; the West Jersey & Seashore, 356 miles; the Long Island, 395 miles, etc. It is now proposed to co-ordinate several of these lines more closely into the system by leases, particularly the Pittsburgh, Cincinnati, Chicago & St. Louis, the Grand Rapids & Indiana, the New York, Philadelphia & Norfolk, etc., which lines are now made parts of the system by ownership of stock.

The Pennsylvania Company, which since 1917 has been purely an investment company, until recently owned over three-quarters of the stock of the Pittsburgh, Cincinnati,

Chicago & St. Louis. More recently it offered to purchase the minority shares by exchanging P. C. C. & St. L. 5 per cent bonds, guaranteed by the Pennsylvania Railroad, par for par for the stock. The Pennsylvania Company and the Pennsylvania Railroad Company have thus secured about 98 per cent of the total stock. The proposal now is to lease the railroad for a period of 999 years from January 1, 1921, for a rental amounting to the fixed charges and for a period of five years 4 per cent on the stock and thereafter 5 per cent.

The case as to the Grand Rapids & Indiana is similar. The Pennsylvania Company by an offer to exchange for the minority stock 4 per cent second mortgage bonds of the Grand Rapids & Indiana which it held in its treasury has acquired about 97 per cent of the outstanding Grand Rapids & Indiana stock. The lease of the latter carrier is like that of the Pittsburgh, Cincinnati, Chicago & St. Louis except that the rental agreed upon is the fixed charges and 4 per cent on the stock. These leases are already agreed and were approved by the stockholders at their annual meeting.

The stockholders were on March 8 also asked to approve long term leases of the New York, Philadelphia & Norfolk, the Cincinnati, Lebanon & Northern, the Cumberland Valley & Martinsburg, and certain of the operating companies, as well as leases of various of the companies whose properties are at present under operating agreements. All of these companies are controlled through majority or in some cases practically entire ownership of stock. There will still be left some 12 operating companies, the two most important of which are the Long Island, 395 miles, and the West Jersey & Seashore, 356 miles, which it is not proposed to lease at this time. These leases represent a most important step in the development of the Pennsylvania Railroad System. They are the present stage in a process of development and integration which extends over a long period. The lines in question have been operated as parts of the system for many years, but it is expected that if they are operated as leased lines, increased efficiency and economy in administration will be facilitated. There will also be simplification and reduction of accounting and the change will permit the system to route traffic and use the terminals and facilities of all the companies for the system without regard to the separate ownership and results to each of the leased companies. Another important feature is the financial aspect. The development of the subsidiary lines which it is now proposed to lease has been assisted by the Pennsylvania Railroad, and in fact their credit has been based chiefly upon the guarantee of the latter; nevertheless it is expected that the proposed arrangement will even further assist the credit of the system.

The balance sheet of the Pennsylvania Railroad Company as of December 31, 1920, shows that on that date there was outstanding funded debt of the Pennsylvania Railroad itself amounting to \$362,851,260. This was an increase of \$56,780,000 over 1919. The amount given of course does not include the recent financing in the form of the \$60,000,000 fifteen-year 6½ per cent bonds maturing February 1, 1936, as this sale was not made until the latter part of January, 1921. The organization of the constituent companies of the Pennsylvania system is so complex that it is not generally realized that these increases in funded debt represent to an extent only increased indebtedness of the system and to a greater extent refunding of the indebtedness of the subsidiary companies. Thus there appears for the first time in the balance sheet an item of \$50,000,000 ten-year 7 per cent secured gold bonds, due April 1, 1930. These notes are secured by \$50,000,000 6 per cent bonds, due April 1, 1970, which were issued in 1920 but which do not show as increased indebtedness on the balance sheet for the reason that they are held by trustees and have not been issued to the public. The proceeds of the \$50,000,000 ten-year notes were used in part

to pay off funded debt of the Philadelphia & Erie, an acquired company. The funded debt had been assumed by the parent company. It matured July 1, 1920, and was as follows: \$7,928,000 of 6 per cent bonds; \$5,263,000 of 5 per cent bonds and \$5,880,000 of 4 per cent bonds.

The \$60,000,000 fifteen-year 6½ per cent bonds maturing February 1, 1936, and which were issued in January, 1921, are to be used as follows: \$20,000,000 to purchase from the Pennsylvania Company locomotives, cars and other equipment acquired by the Pennsylvania Company for operation on roads which that company leases, but the leaseholds of which are now held by the Pennsylvania Railroad; \$22,000,000 to purchase also from the Pennsylvania Company stock of the Pittsburgh, Fort Wayne & Chicago (a leased line) and stock of other companies embraced in the system; \$6,138,000 to pay installments on equipment trusts due in 1921 and \$1,151,000 for certain real estate mortgages. Carrying the matter now to the Pennsylvania Company it should be noted that the proceeds paid over to the latter in these transactions are to assist in meeting maturities of long term indebtedness of the company due June 15 and July 1, 1921. Thus of the total of \$60,000,000, the sum of nearly \$50,000,000 is to be used for refunding although at a higher rate of interest than the present indebtedness.

Returning now to the increases in the funded indebtedness of the Pennsylvania Railroad in 1920 reference should be made to the \$6,780,000 of 6 per cent collateral note due November 11, 1930, issued to the United States government to cover a loan from the revolving fund for additions and betterments including a grain elevator, engine house facilities, yard tracks and shops. In the matter of equipment trust obligations, note should be made of the issuance to the United States government of equipment trust certificates amounting to \$52,012,000 for cars and locomotives allocated to the Pennsylvania System by the United States Railroad Administration. The Pennsylvania followed a liberal policy in connection with the standard equipment and took a large amount of it. The equipment has been assigned to various lines of the system and these lines will assume the obligations accordingly.

On December 31, 1920, the Pennsylvania Railroad had 133,068 stockholders, an increase of 13.03 per cent over December 31, 1919. The average holding was 75 shares. It would be difficult to point to any other single factor to show the respect in which the Pennsylvania Railroad's prestige and policies are held in this country or abroad. This wide distribution of stock is the result of the conservative and sane financial policy and the efficient management for which the Pennsylvania is noted. We point to these facts to show how unfortunate it is that the progress that the system has made in the many years of its existence should have been impeded in any way by the results of the war as shown in the effects of federal control. However, the Pennsylvania Railroad may be looked upon merely as a large part of the country's entire railway system. We have enough confidence in the general railway situation to believe that railway conditions as a whole are going to improve in satisfactory fashion as time goes on. Those who have invested in Pennsylvania Railroad securities will bear in mind that the Pennsylvania has no special conditions that should prevent it in any way from realizing its share in the general improvement. It may seem a simple thing to say, but it is important to realize that the measure in which the company will realize the benefit of improvement will naturally depend principally upon operating efficiency. The Pennsylvania, like any road, has before it not only the task of restoring its operations to their pre-war efficiency but its management will also give due regard to the changed conditions embodied in the working out of the provisions of the Transportation Act.

The following table shows the principal figures of the operations of the Pennsylvania Railroad in 1920 and 1919:

	1920	1919
Mileage operated	7,425	7,327
Freight revenue	\$384,372,254	\$318,996,194
Passenger revenue	133,241,548	123,903,032
Total operating revenues	566,860,758	489,270,945
Maintenance of way and structures	89,190,602	72,449,041
Maintenance of equipment	177,897,960	144,113,675
Traffic expenses	5,046,930	4,118,754
Transportation expenses	293,230,169	215,463,717
General expenses	14,617,083	11,428,801
Total operating expenses	590,049,937	455,357,461
Taxes	19,014,599	15,412,661
Net railway operating income	Def. 48,447,371	13,908,663

The following gives in brief the corporate income account:

	1920	1919
Compensation, January and February	\$13,156,968	
Guaranty, March 1 to August 31	37,981,814	
Net railway operating income, September 1 to December 31	11,965,085	
Total	\$63,103,867	\$67,126,463
Non-operating income	24,562,834	25,233,906
Gross income	87,666,701	92,360,369
Deductions from gross income	54,865,028	49,492,271
Net income	32,801,673	42,868,099
Dividends	29,950,404	29,950,704
Balance to profit and loss	611,479	10,500,717

New Books

Steam Locomotives of the Present Time (Die Dampflokomotiven der Gegenwart). By Robert Garbe. 7½ in. by 10½ in., illustrated. Volume 1, 859 pages; volume 2, 54 lithographed tables and drawings. Published by Julius Springer, Linstrasse 23, Berlin W. 9, Germany.

This is a second edition of this well-known work originally published in 1907. The text has been brought up to date and an attempt has been made to present the same well-rounded survey of locomotive development in all countries that was given in the earlier work. Apparently the war interfered with the compilation of data and some parts of the book are unfortunately incomplete.

The book opens with a historical sketch of the use of highly superheated steam in locomotives and a discussion of the essential progress in locomotive building in the past 20 years. The first chapter deals with superheat as a working medium, the question being discussed largely from the theoretical viewpoint. The succeeding chapters are devoted to the calculation of the main dimensions of superheated steam locomotives, two-cylinder and multi-cylinder locomotives with simple and double expansion and the uniflow engine of which a rather extended discussion is given. Various types of superheaters are described and noteworthy structural details of more recent locomotives are discussed. A section is devoted to the latest developments in feed water heating. The superheated steam locomotives of the Prussian State Railways are described and the section following is devoted to superheated locomotives of various railroads in countries other than Germany. The American locomotives are described in this and in a previous chapter but the types shown cannot be classed as typical examples of the latest developments in motive power in this country. The results of numerous tests of superheated steam locomotives principally in Germany are set forth and it is notable that these are nearly all from seven to ten years old.

Apparently the principal shortcoming of the book is the lack of complete and up-to-date information concerning the locomotives built by the allied countries. This, however, is not of primary importance as American readers would be chiefly interested in the book for the information they might obtain regarding the progress that has been made in Germany in the years during which communication was interrupted. Apparently the descriptions of German motive power have been given painstaking attention and the work of German designers during and since the war, is here presented for inspection for the first time.

Letters to the Editor

"Economies at Small Expenditures"

HAILEYVILLE, Okla.

TO THE EDITOR:

The *Railway Age* of December 17 contained a letter on the above named subject by H. L. Reed, general superintendent of the Rock Island Lines. While no doubt the managers of the railroads are looking for men with new and effective methods for handling railroad work that can be put into practice without the expenditure of a great deal of money it has occurred to the writer many times that while they were looking for such men they would also look for men who can produce results with the facilities at hand and the methods already in effect.

Two of the important factors in connection with railroad operation are the cars and the locomotives. The capacity of the box car and the locomotive is about the same the year around.

Day after day train crews are called at terminals to leave at a certain time, but for some reason or other the greater per cent are late; some excuse is always offered: engine late, train not made up, bad order cars to set out, cars without bills in train, held for incoming trains, etc., etc. Some conductors and engineers are always ready to go on time and some others are always late. It has been found that some crews make more overtime than others; yet the fellows who are behind seem to get along just as well as the one who gets over the road and saves the overtime.

When business slacks is the time to reduce all expenses and not wait two or three weeks to see if it will not come back and in the meantime the railroads are paying men for short days and the like.

Freight trains will leave a terminal and after they are out on the road some distance will begin to receive messages about certain work to be done on the trip. Except in the case of emergency, such instructions should be given them at the time the conductor is cleared at the terminal, thus giving him a chance to line up his brakemen and the engine crew in order to be ready to do it on reaching the designated places.

It does not seem right that a train crew should be permitted to live at one end of the run and the engine crew at the other and the company pay deadhead miles when any member of the train crew lays off or becomes sick simply because he lives away from the home terminal.

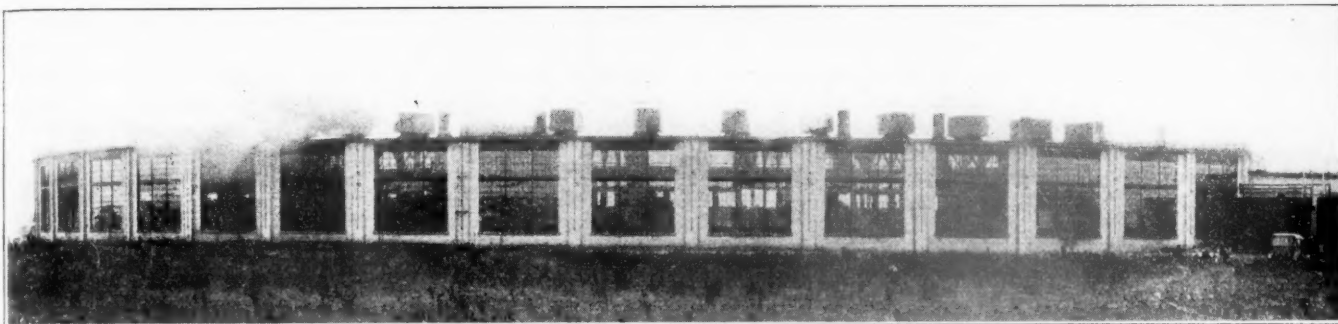
When engines are scarce, it does not look well to have two or three engines standing around idle and the railroad blocked with cars. Every day a foreign car is on the rails means an expense.

A great deal of expensive overtime can be eliminated by reducing train service on Sundays, thereby doing away with the services of many car men, machinists, etc.; dead freight and empties can lay in the yards over Sunday without any great inconvenience.

When trains exceed the speed limit and encroach upon the time of other trains, thereby inviting accident, it is time something is being done to remedy the condition. It does not require college graduates to detect the above lost motion in the operation of the railroads; and it is just the things mentioned above, and many more of a similar nature, which need correcting. The payrolls covering supervisory forces have been increased to an enormous extent during the past five or six years but the same old conditions still rock along. Who is responsible?

J. L. Coss,

Train Dispatcher, Chicago, Rock Island & Pacific.



The Outer Wall of the Engine House Is Largely Glass

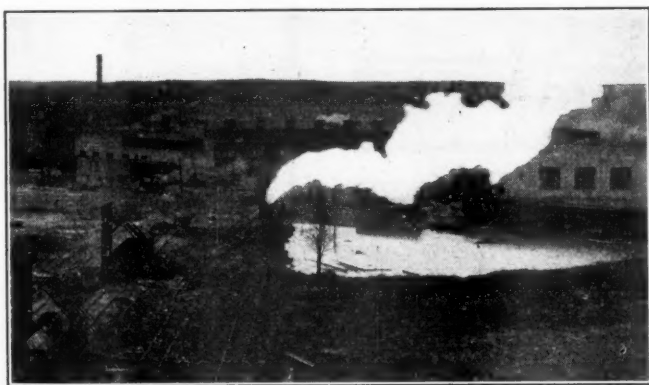
Small Engine Terminal Embodies Novel Details

**Pere Marquette Roundhouse at New Buffalo Is Characterized
by a Number of Unique Developments**

THE PERE MARQUETTE has recently completed the construction of a new locomotive and freight terminal at New Buffalo, Mich., as the principal feature of a project to readjust the length of engine districts between Grand Rapids, Mich., and Chicago, and thereby obtain an improved operating arrangement. The engine terminal is of particular interest as an example of modern thought in details and arrangement as applied to a relatively small layout. A somewhat similar layout was completed about the same time for the Pere Marquette at Plymouth, Mich.

The New Buffalo project is an entirely new development designed to supersede the existing terminal at Benton Harbor, 29 miles further east. This change lengthens the Grand Rapids engine district from 86 miles to 115 miles and

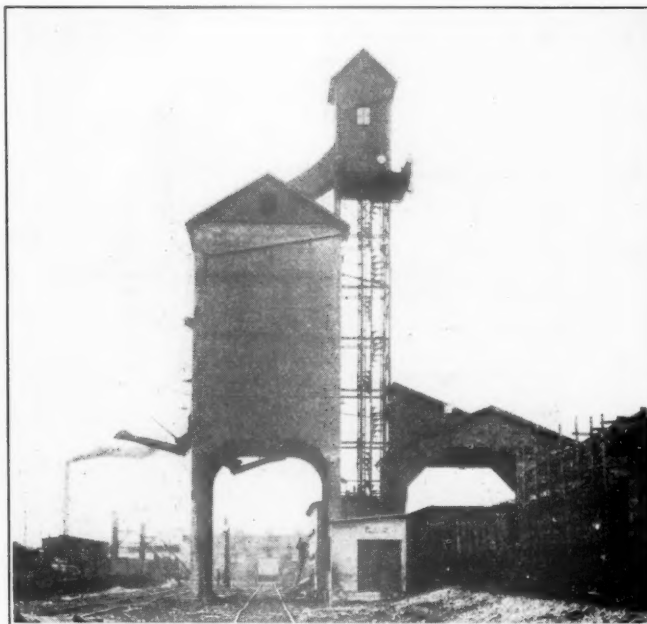
Buffalo is a town of only a few hundred inhabitants, provision has also been made for a 50-room hotel for the accommodation of the terminal employees and train crews. The classification yard comprises a simple drill yard of 15 tracks averaging about 4,000 ft. in length in addition to running tracks for the main line and the La Crosse (Indiana) branch. A separate grid of tracks to the east of the classification yard provides a scale track, a caboose track and four tracks for car repairs. The operation of the classification



View from the Top of the Coaling Station

shortens the Chicago district to 63 miles, or to 50 miles to South Chicago. The district to the east of New Buffalo is thus made of a normal engine length, while that to the west is of a length that can be operated as a turn-around for certain classes of traffic. The primary advantage of the new arrangement lies in the fact that the New Buffalo terminal is located very near to a point marking a change in ruling grades, so that while engine rating east of New Buffalo is 2,400 tons, west of New Buffalo it is 3,200 tons. Consequently, one of the primary functions of this terminal is to adjust the train lengths to the ruling grades. It will also serve as the primary point for classifying trains for movement over the various branches of the road.

The facilities comprise a complete engine terminal, a classification yard and a car repair yard and, since New



The Coaling Station

yard is facilitated appreciably by long switch leads extending 7,000 ft. to the east and 4,500 ft. to the west respectively. The track arrangement for the engine terminal is so simple as to require no explanation.

The Engine House

The roundhouse has been built with 16 stalls with space left for 11 additional stalls without interfering with the existing track arrangement. The design of the roundhouse is marked by the efforts made to secure adequate light and ventilation. To this end the roof is generally higher than in

most roundhouses of the same general type. For instance, the windows in the outer walls have a clear height of nearly 20 ft. Further light is afforded by clerestory windows placed one panel back from the doors and also by 80 sq. ft. of glass area in each of the doors and the transoms over them. As a means of insuring permanent value to the glass area in

flood lights fitted with 100-watt nitrogen lamps. They are mounted in such a way as to be adjustable, both horizontally and vertically, so that in addition to providing general illumination, it is possible to concentrate the light on any portion of the space between the locomotives where work may be in progress. Further illumination is made possible by provision



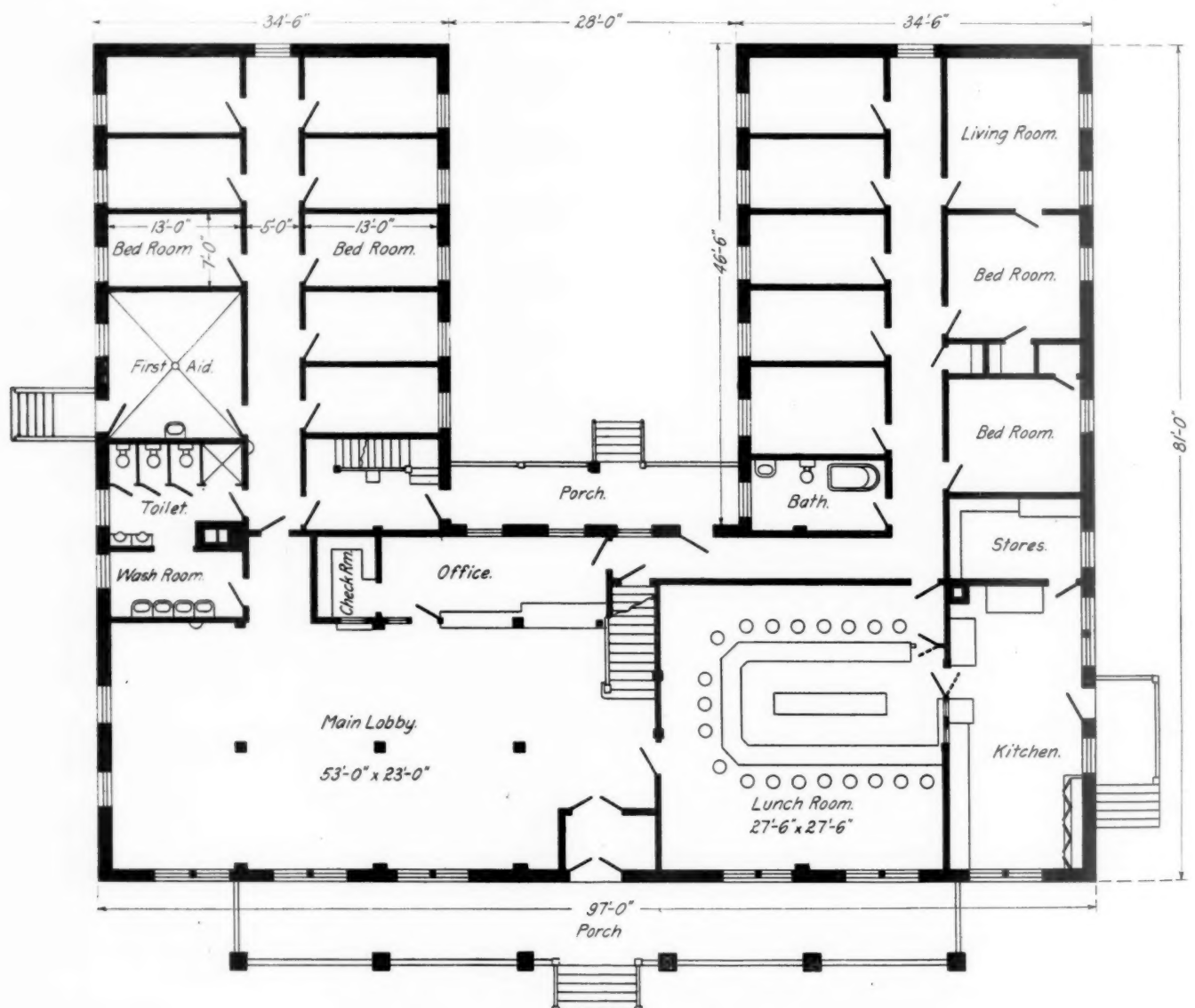
The Classification Yard

the clerestory windows, a gallery or permanent scaffolding has been provided throughout the entire length of these windows, so that the roundhouse forces will have no excuse for not keeping them clean.

Special pains have been taken also to provide adequate

for a plug receptacle in each stall for the use of extension cord lamps.

The provision of high ceilings is only one measure taken to assure good atmospheric conditions in the house. A further effort in this direction is provision for smoke jacks of



First Floor Plan of the Employees' Hotel

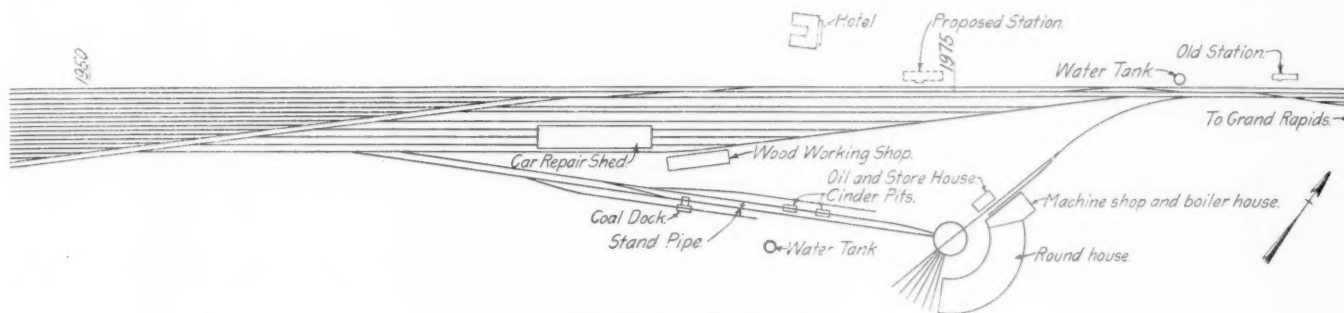
artificial light with rather unusual results. Instead of vertically hung lights, flood lights have been provided as shown in the plan with three in each line of posts, one on the pilaster in the outer wall, one on an intermediate line of posts and one on the door posts. These are the Utility type

wide spread, these being Johns-Manville Transit board jacks with a bottom length of 12 ft. To insure the elimination of smoke and gases which fail to enter the smoke jacks, a large ventilator of wooden construction has been provided over the midpoint of each stall. The results secured in the operation

of the engine house thus far, with these facilities for ventilation, have been fully up to expectations.

The roundhouse is of frame construction with brick walls, and follows the usual practice except for the use of cast iron door posts. Cast iron is also used extensively in the framing

at its inner end with a pit or manhole in which the return pipes for condensation from the heating coils is connected to the main return pipe, these catch basins being connected by a line of eight-inch sewer pipes through which the main return extends to a pit in the boilerhouse. From this the condensa-



The Engine Terminal

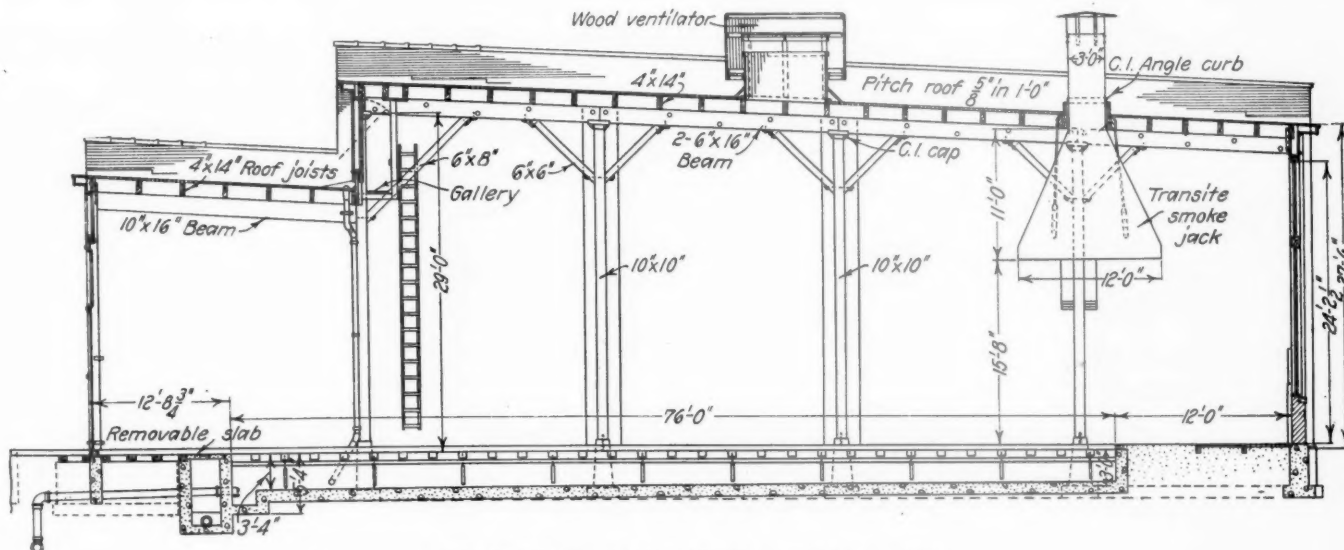
connections, following high-grade mill construction practice. Another unique feature of the locomotive doors is the use of old rails as door stops. These rails extend the full height of the door and are braced from the lintels by angle irons. The advantage of the full height door stop is that it eliminates a tendency to warp the door. The roof consists of $1\frac{1}{4}$ in. D. and M. boards on 4-in. by 14-in. joists, spaced 3 ft. to 3 ft. 9 in. center to center and covered with a five-ply tar and gravel roofing.

The Engine Pits

A refinement in the engine pit construction is seen in the extension of the pit walls in the direction of the turntable for

tion is returned by a steam trap to the boilers. A drop pit embracing Tracks 1 and 2 follows the usual construction except that it is fitted with angle iron bridges for the skidding of the rail girders, these bridges being so placed that they do not interfere in any way with the dropping of the wheels. For the present a heavy spread of cinders serves as a floor for the roundhouse with the exception of an 8-ft. walk extending the length of the outer wall.

Owing to the fact that all engines served by the New Buffalo terminal are pooled in the two adjoining engine districts and would, therefore, frequently run into Grand Rapids where the system repair shops are located, provision has been made at the new terminal for only minor repairs.



Longitudinal Section Through a Typical Stall

about nine feet beyond the inner ends of the pits, thus putting the pit rails on the same character of support to a point three feet outside the house. This insures perfect grade and alinement of the track within the house. The rails are spiked to 6-in. by 7-in. ties imbedded in the concrete walls at intervals of 2 ft. 6 in. These ties also serve as spiking timbers for the jacking planks which flank the track on either side. Owing to the fact that the roundhouse is heated by direct radiation with pipe coils in the pits, the tops of the pit walls are provided with a coping or overhang to serve as a support for the steam coil hangers and also to protect them from falling objects. The engine pits drain to a small catch basin at the inner end which is connected by a drain with a drainage system outside the house. Each engine pit is also provided

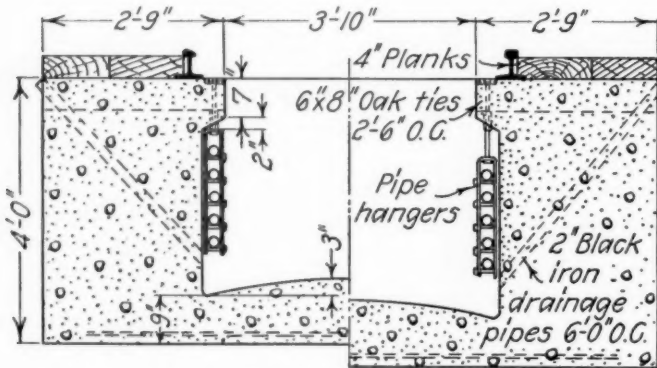
Consequently, the machine shop, the boilerhouse and the necessary offices were readily housed in a small wing located at one end of the roundhouse. The requirements for the boilerhouse are not extensive since all electric current for lighting and power use is being purchased from a local public utility, the only boiler capacity required being for heating purposes. The boiler room is equipped with two 150-hp. horizontal tubular boilers and the pumps required for boiler feed and for a National boiler washing system. The machine shop is floored with Kreolite creosoted wood blocks and the boiler room with paving brick.

The turntable is a 90-ft. deck table built by the American Bridge Company and operated by a Nichols tractor. Special pains have been taken to provide adequate subdrainage with

the use of a bed of cinders and a circle of six-inch drain pipes connecting with the catch basin.

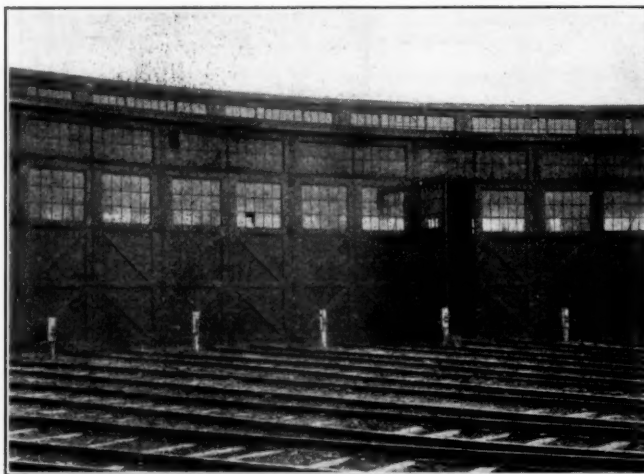
The Turntable

The auxiliary facilities of the engine terminal include a 250-ton Roberts & Schaefer coaling station of reinforced concrete and structural steel, a sand drying plant, two Robertson cinder handling plants, an oil and storage house and a 100,000-gal. conical bottom water tank built by the Chicago Bridge & Iron Works. The last named serves a standpipe between the inbound and outbound tracks. The water service



Typical Half Section of the Engine Pits

involves no particular problem at this point because of the existence of a pumping station and tank serving trains on the main line. The new work consisted of an extension from the existing pipe lines to the new tank and standpipe. The combined oil and storage house consists of a building 31 ft. by 63 ft. with one story and basement and having a reinforced concrete floor, while an area 18 ft. by 33 ft. on the first floor used for handling oil is provided with a reinforced concrete roof. The oil tanks are housed in the basement and the



The Inner Side of the Round House Is Well Lighted

portion of the first floor used for handling oil is separated from the remaining portion by fire walls with tin-clad fire doors.

The Car Repair Shed

The car repair yard is served by a building 35 ft. 10 in. by 184 ft., of which a length of 42 ft. will be used as a woodworking shop, 70 ft. as a lumber shed, 21 ft. as a casting shed, 20 ft. as a storeroom and 30 ft. as a lunch room, toilet and office. This building will be entirely of frame construction. The lumber and casting sheds will be furnished with continuous rolling doors for easy access.

The hotel is a two story building in the shape of a "U." In addition to a main lobby, restaurant and some 50 rooms, shower baths, toilets and wash rooms, a small first-aid room has been provided owing to the absence of anything in the nature of a hospital in the community. In the absence of a public sewerage system, the outfalls of the sanitary plumbing of the roundhouse, car repair house, hotel and station, are to be run into two septic tanks.

In addition to the facilities above described which are now nearing completion, the plans for this terminal include a new passenger station with provision for office space on the second floor.

This terminal was designed and constructed under the direction of Job Tuthill, chief engineer of the Pere Marquette, Detroit, Mich., with Frank Manning as assistant engineer in charge. H. V. Snyder & Son, Battle Creek, Mich., was the general contractor. Work on this project was started during the period of government control but the progress was slow on account of two protracted interruptions. With the return to private control the work was prosecuted more vigorously and the engine terminal was turned over to the mechanical department on November 4, but other portions of the plant were not completed until sometime later.

No Time to Reduce Rates

WASHINGTON, D. C.

THE PRESENT RAILROAD situation affords little prospect of reductions in freight rates, says Chairman Clark of the Interstate Commerce Commission in a letter to Senator Harris of Georgia, in reply to a letter inquiring as to the possibility of a reduction. Earlier correspondence between Chairman Clark and Senator Harris, who expressed the opinion that a reduction in rates would stimulate traffic, had previously been made public. Under date of March 5 Mr. Clark wrote:

"I wish it were possible for me to write you encouragingly in response to your letter of the third instant, but I do not see that I can add to what I said in my letter to you of December 22 on the same subject, to wit, the probability of reductions in freight rates.

"The situation is not so good now as it was in December. There has been quite a substantial falling off in general traffic.

"The average operating ratio of the railroads of the United States is something over 90. That means that for every dollar that the railroads earn they pay out in operating expenses more than 90 cents. Due to the narrow margin between revenue and operating expenses a great many roads are not earning their operating expenses and fixed charges and a good many are not even earning their operating expenses.

"Under these circumstances it is difficult to find an argument in favor of reducing rates unless in instances in which it can be shown that the rates are stifling the traffic and that lower rates which would still be compensatory would effect a movement from which there would be some return.

"I have just been going over some figures of the shipments of fruits and vegetables from Florida for the season 1920-1921 as compared with the season 1919-1920. These figures show that from November 1, 1919, to February 28, 1920, both dates inclusive, the number of carloads of fruits and vegetables shipped from Florida by rail was 26,886 as compared with 28,420 carloads during the same period in the season of 1920-1921."

A similar letter was also sent to a Florida senator who has been urging reductions in rates on the ground that the high rates have prevented the movement of Florida products.

Employees Win Verdict in Erie Controversy

Labor Board Finds Carrier Guilty of Violating Wage Rulings— National Agreements Hearings Continue

THE ACTION of the Erie Railroad in ordering reductions in the wages of its track laborers, the re-establishment of the seven day week for the train dispatchers and the deduction of one day's pay from all employees, without negotiation with the men affected, was condemned by the Railroad Labor Board in a decision dated March 2 and announced on March 7. This decision found the Erie guilty of violating the Board's Decision No. 2 on six counts and denied jurisdiction in the controversy over wages until proper conferences have been held and a disagreement reached.

The progress of this controversy has been reported in the *Railway Age* of February 18 (page 412), and of March 4 (page 520).

After reviewing the history of the controversy the Board handed down an opinion which follows in part:

The intent of Congress in enacting Title III of the Act was to prevent interruption to the operation of any carrier growing out of disputes between the carrier and its employees. To accomplish this intent the Act (Section 301) makes it the duty of all carriers, their officers, agents and employees to exert every reasonable effort and to adopt every available means to avoid any interruption to operation growing out of disputes between the carrier and its employees. The same section requires the carriers and their employees to consider and if possible to decide all such disputes in conference between the representatives designated and authorized so to confer by the carrier or the employees directly interested in the dispute. This section also requires that if the dispute is not decided in conference, it shall be referred by the parties thereto to the Railroad Labor Board, which board by Section 307 is required to hear and decide such disputes so referred.

In April, 1920, an organization of railroad yard employees which was not a party to the conference of March 10, 1920, referred to above, after unsuccessful efforts to decide their disputes with the carrier by conference, abandoned the service in concert and made application to this Board for a determination of what should constitute just and reasonable wages for them. Prior, however, to the application, the Labor Board had adopted Order No. 1, which provided in part as follows:

It is decided and ordered by the Labor Board as one of the rules governing its procedure that, as the law under which this Board was created and organized makes it the duty of both carriers and their employees and subordinate officials having differences and disputes to have and hold conferences between representatives of the different parties and interests, to consider and if possible to decide such disputes in conference, and where such dispute is not decided in such conference to refer it to this Board to hear and decide; and as it is further contemplated and provided by the law that pending such conference, reference to and hearing by this Board it shall be the duty of all carriers, their officers, employees and agents to exert every reasonable effort and adopt every available means to avoid any interruption to the operation of any carrier growing out of any such disputes; therefore, this Board will not receive, entertain or consider any application or complaint from or by any party, parties or their representatives who have not complied with or who are not complying with the provisions of the law or who are not exerting every reasonable effort and adopting every available means to avoid any interruption to the operation of any carrier growing out of any dispute between the carrier and employees.

The intent and plain meaning of Order No. 1 was to serve notice on employees and carriers alike that the law required carriers and their employees to consider their disputes in conference and refer them, if undecided, to this Board and to refrain, pending this Board's decision, from any act which would tend to bring about an interruption to commerce.

The application of the striking yard employees was not entertained, as they were not acting in obedience to the mandate of the Act.

The officers of the Erie Railroad Company have been at all times aware of Order No. 1.

On December 17, 1920, the Labor Board issued an announcement, which said in part:

The Labor Board calls upon the officers of all carriers subject to the Act to obey it in letter and spirit and particularly calls upon them to meet in conference representatives of the employees seeking the decision of disputes; to decide such disputes in conference, if possible, and if not possible to join in referring such disputes to this Board, and to refrain from in any manner intimidating employees seeking the redress of grievances or punishing representatives of employees seeking conference.

The Labor Board also calls upon all organizations of employees of carriers subject to this Act to obey it in letter and spirit and particularly calls upon them to join in a reference of the dispute to this Board if it is

not possible to decide it in conference, and to refrain from submitting strike ballots to the membership in advance of such reference.

The interest of the public as well as that of the officers and employees of carriers requires that such officers and employees faithfully observe the provisions of the Act. Departures from its letter and spirit, if persisted in, will be widely imitated, its purposes destroyed, transportation interrupted and the well-being of our people impaired.

The purposes of this announcement have been fulfilled by the compliance of substantially all carriers and organizations of employees of railroads.

The officers of the Erie were furnished with copies of this announcement, and it is believed they were fully aware of its contents long prior to the promulgation by them of the orders complained of herein.

At the hearing on February 23, 1921, the position of the carrier on the charge of violation of Decision No. 2 was stated by its counsel. This statement, it is believed, may be fairly thus summarized:

The decision alleged to have been violated is Decision No. 2. Decision No. 2 found the wages therein determined to be just and reasonable, to be such on July 20, 1920; the decision did not find those wages to be now just and reasonable. The Labor Board is without power to determine wages for an indefinite time. The decision did not specify how long it was to remain in effect. When certain conditions upon which the Labor Board had predicated its findings have substantially changed since the decision, as in this case, the relation between wages and the cost of living and the scale of wages paid for similar work in other industry, departure by the carrier from the decision does not constitute such a violation of Decision No. 2 as to justify a finding of violation by this board.

It was contended that the said condition had in fact changed.

Evidence of such change was offered in the shape of statements by the general manager tending to show a reduction in the scale of wages paid common labor and a reduction in living costs.

No evidence was offered of any change in the scale of wages paid for work similar to that of train dispatchers.

As to the carrier's departure from the rules and working conditions assumed as a basis of wages by Decision No. 2, and as to which the Labor Board had directed no changes should be made except by agreement, it was contended that the carrier had never accepted that portion of the decision, although it had, prior to the orders complained of, obeyed such direction, and is now participating by its representative in the proceedings to determine the reasonableness of such rules.

The position of the carrier and the evidence submitted have had careful consideration.

It was not the intention of this Board that Decision No. 2 should constitute a perpetual edict, nor is there any expression therein to justify such an inference. The carriers and the organizations of their employees were left free by that decision to negotiate such agreements as they saw fit, subject to the power of this Board to suspend any such agreement if it should involve such an increase in wage as would be likely to necessitate a substantial readjustment of the rates of any carrier. No restraint was attempted to be placed upon the power and legal duty of the carriers and their employees, if it was not possible to agree upon a readjustment of wages, to refer the dispute to this Board for decision. This Board sits day and night to hear, consider and decide such disputes. It was the intention of the Labor Board, however, that the rates found therein to be just and reasonable should be paid by carriers parties to the decision until other rates should be agreed to by the parties or until this Board on proper reference should determine other wages to be just and reasonable.

A decision voidable in whole or in part by one party to proceedings at its option upon any change in conditions determined by that party to be substantial is a novelty in law and as fantastic as novel. Its bare statement would seem to carry refutation, yet it was gravely advanced by the learned counsel for this carrier. Its consequences are, therefore, stated.

This position, of course, renders nugatory and vain the elaborate and costly processes established by the Act and applied by this Board. It sweeps aside at the will of one party a decision arrived at after the presentation of evidence and argument by the many parties to the dispute, accepted by all and now obeyed by substantially all carriers. It justifies a disregard of the factors specified by Congress for the ascertainment of just and reasonable wages and substitutes for these factors the financial benefit of the carrier. If valid, the intent of Congress that conference,

reasonableness and justice should be substituted for power, violence and disorder in the settlement of railroad labor disputes is utterly destroyed and legislation enacted after the most careful consideration rendered ridiculous and even fraudulent. If a carrier may arbitrarily reduce wages decided to be reasonable and set aside rules while a party to proceedings with regard to such rules, no reason appears why railroad employees may not announce an immediate intention of abandoning the service in concert unless demands for increased wages or more favorable working conditions are at once satisfied, provided a trend toward higher living costs shall have appeared or wage scales in similar industries shall have advanced. Such conduct is highly provocative of interruption to traffic and is not only not consistent with the Act, but is thereby clearly condemned and prohibited.

It is the judgment of this Board that no carrier may, without violating the spirit and letter of Decision No. 2, in case its revenue for any month should be estimated to be insufficient to meet its expenses for labor and material for that month, arbitrarily appropriate to itself wages due its employees in such amount as to make expenses for labor and material equal or exceed revenues for that month.

It was not, in the judgment of this Board, the intention of Congress that, consistently with Title III of the Transportation Act, a carrier may join in the reference of a wage dispute to the Labor Board, accept its decision, apply increases in rates in part authorized by the Interstate Commerce Commission to provide for wage increases decided by this Board to be just and reasonable, and, if revenues of any month are estimated to fall below expenses for that month, arbitrarily reduce wages to such a point as to bring estimated expenses for any month within estimated revenues for such month.

There is a simple, orderly and legal method open to all carriers to secure appropriate relief in case they are of the opinion that the wages fixed by Decision No. 2 are not just and reasonable. If, after the failure of conference between duly authorized representatives of the carriers and of the employees directly interested to decide a dispute and reference to this Board thereof, the carrier is able to show that the wages fixed by Decision No. 2 are not now just and reasonable, this Board will, as its duty is under the law, decide what wages are just and reasonable.

This procedure was at all times well known to the officers of the Erie Railroad.

The Transportation Act makes it the duty of this Board in case of disputes as to wages duly referred to it to determine what wages are just and reasonable. It is, therefore, clear that Congress intended that carriers should pay just and reasonable wages in order that transportation should not be interrupted by strikes over wage disputes. Congress was aware that there might be disagreement between the parties as to what constituted just and reasonable wages and in order to secure uninterrupted transportation during the pendency of the controversy made it the duty of the officers of carriers to confer with the representatives of the employees interested. Section 301 clearly expresses this intent and requires the performance of this duty. The relation between the scale of wages paid for similar kinds of work in other industries and the relation between wages and the cost of living are not the only factors determining reasonable and just wages.

Five other factors are named in the Act and other relevant circumstances are required to be considered by this Board and also inferentially by carriers, in determining just and reasonable wages. Furthermore, it is clear that Congress intended that the scale of wages paid in other industries and the relation between wages and the cost of living should be of sufficient certainty and stability to warrant the increase or reduction of wages by reason of changes in this factor. It will require time to determine whether the scale of wages now paid by other industries for the classes reduced in pay by the Erie is temporary or of sufficient permanence to be considered as a factor affecting justness and reasonableness of railroad wages. This necessity was recognized by the President of the United States on August 25, 1919, when he urged railroad employees to refrain from pressing their demands for increased wages pending a better opportunity to estimate the permanency of high living costs. This request was obeyed by such employees, although obedience required the endurance of heavy economic pressure for eleven months, and living costs continued to rise during this entire period. No evidence except a claim of general information to that effect was offered by the Erie of a substantial reduction in living costs. According to the Department of Labor statistics, these costs have receded 11.4 per cent from July 1, 1920, to February 1, 1921.

No evidence was offered by the carrier of any changes in the scale of wages paid for similar kinds of work in other industries except as to common labor.

No relation was shown or attempted to be shown between the changes claimed in the factors specified and the reduction made.

It is the opinion of this Board, accordingly, that the action of

the Erie is not even consistent with the legal theory advanced by its counsel.

It was also suggested by the counsel for the company that Title III imposed no duty on officers of carriers to confer with representatives of organizations of employees. This suggestion is contrary to the plain meaning of the requirement of Section 301 that all available and reasonable means and efforts must be adopted and exerted to avoid interruptions to operation growing out of any dispute between carriers and their employees. All such disputes are to be considered and if possible decided in conference between representatives designated and authorized so to confer by the carriers and employees directly interested in the dispute. The evidence shows that the representatives of the employees directly interested so designated and authorized were the designated officers of the complaining organizations. It was clearly the legal duty of the carrier's designated officers to confer with such designated officials of these organizations. This duty was admitted by the general manager of the carrier, but as to the complaining organizations it was not performed.

It was the position of the general manager that the financial necessities of the property compelled the action taken. The evidence of necessity offered consisted of the statement that the estimated expense for labor and material for December exceeded the estimated income for that month by 1 per cent and for the month of January by 7 per cent.

This is not a proceeding to determine what wages are now just and reasonable as to this carrier for the classes of employees concerned herein. It is to determine whether or not there has been a violation by this carrier of Decision No. 2 of this Board.

When the Erie Railroad Company shall have rescinded the orders set out above and shall have paid the wages determined by Decision No. 2 to be just and reasonable, to such of its employees as have not agreed to receive other rates of wages and when also it shall be made to appear that the officers of this carrier have had or sought a conference with the authorized and designated representatives of the employees directly interested and when, if it has not been reasonably possible to decide the disputes in conference, the dispute shall have been referred to this Board by the parties thereto or by either of them, this Board will hear and determine such dispute and decide what wages are now just and reasonable.

This Board cannot consider in this proceeding what wages are now just and reasonable for the employees concerned herein.

The management of the Erie, in reducing wages and in altering working conditions without seeking conference with the representatives of the employees interested, in the opinion of this Board, has acted in conflict with Section 301 of the Act and in conflict with Order No. 1 quoted above. Therefore, this Board may not, consistently with Title III of the Act and with the said order, determine just and reasonable wages in this dispute.

The actual decision of the Board was rendered as follows:

It is the judgment and decision of this Board that the management of the Erie Railroad Company has violated Decision No. 2 in the following respects:

(1) By deducting the January 31st earnings from the January earnings of all monthly rated employees not consenting to such deductions.

(2) By deducting four-twenty-eighths of the February earnings of all monthly rated employees not consenting to such deduction.

(3) By deducting January 31st earnings from the January earnings of such daily and hourly rated employees classified prior to wage awards as monthly rated employees who have not consented to such deduction.

(4) By deducting four-twenty-eighths of the February earnings of the employees set out in (3) above who have not consented to such deductions.

(5) By arbitrarily reducing the wages of trackmen to 30 cents per hour and to other hourly rates contrary to Section 6, Article III of Decision No. 2.

(6) By arbitrarily requiring train dispatchers to work seven days per week for wages determined by this Board in Decision No. 2 to be just and reasonable for six days' work per week, contrary to Article V of Decision No. 2.

This decision is not to be construed as a finding that the carrier has not violated Decision No. 2 in other respects.

Atlanta, Birmingham & Atlantic Employees Strike

Employees of the Atlanta, Birmingham & Atlantic, the first carrier to come before the Board to justify a reduction in wages on March 5, went on the first "authorized" strike since the Board was created. About 1,500 men walked out and traffic on the road is at a standstill. B. L. Bugg, president and receiver of the road, has announced that new men will be employed and operation resumed as soon as possible.

This development came after a series of rapid events commencing with the carrier's announcement of a wage reduction effective on February 1. The progress of these developments was recited in the *Railway Age* of February 4 (page 319), of February 11 (page 367), of February 18 (page 412), of February 25 (page 454), and of March 4 (page 520). After appointing Mr. Bugg receiver of the road, Judge S. H. Sibley of the United States District Court of Atlanta, Ga., issued an order putting into effect the wage reductions which Mr. Bugg had previously asked the Labor Board to authorize. It is against this ruling that the men are striking.

Heads of railroad unions in Chicago declare that the strike has been called to enforce compliance on the part of the carrier with the provisions of the Transportation Act. Their position is that the wage cut is in violation of the order of the Labor Board that no reduction be made pending further conferences between the line and its employees.

Members of the Labor Board have unofficially taken the ground that an "extremely delicate" situation has arisen out of the action of the carrier in cutting wages under the order of Judge Sibley. The present issue therefore is whether or not a federal court can override a decision of the tribunal established by the Transportation Act. Some of the union chiefs hold that nothing short of a decision from the United States Supreme Court will make clear the relation of the Board to the federal courts.

March 26 has been set by Judge Sibley as the date upon which hearings on the revised wage scales will be held. The Labor Board has taken no further action.

Missouri & North Arkansas Strike Continues

A situation somewhat similar has already arisen on the Missouri & North Arkansas, where the employees have been on strike for over a week. The latest returns from Harrison, Ark., the headquarters of the road, indicate that with the return of some of the strikers, together with the employment of new men, normal service is gradually being resumed. C. P. Phelan, general manager of the road, has announced "that no unions will be recognized hereafter and that Missouri & North Arkansas will be operated from now on as an 'open road.'"

The development of this controversy was described in the *Railway Age* of February 25 (page 454), and of March 4 (page 520). These three cases are viewed by many as means whereby the prerogatives and power of the Labor Board, and the intent of the labor provisions of the Transportation Act may be definitely settled.

Individual Carriers Act to Reduce

Wages of Unskilled Labor

Acting in accordance with the suggestions made by the Labor Committee of the Association of Railway Executives recently several of the carriers have requested representatives of their unskilled labor to participate in conferences at which the justness and reasonableness of proposed reductions in their basic wages are to be discussed. This course is in conformity with the provisions of the Transportation Act. It is not probable that agreements will be reached at these conferences and they will accordingly be referred to the Labor Board for settlement. Among the roads which have already requested conferences with their unskilled labor are the New York Central, the Pennsylvania, the Delaware, Lackawanna & Western, the New York, New Haven & Hartford, the Boston & Albany, the Boston & Maine, the Michigan Central, the Cleveland, Cincinnati, Chicago & St. Louis, the Northern Pacific, and the Missouri Pacific.

Executives Abolish Labor Committee

At a meeting of the Association of Railway Executives held at New York on March 4 the labor committee, of which

General W. W. Atterbury is chairman, was abolished, the Association asserting that the committee had virtually completed its work and that its further maintenance was a constant invitation to seek a uniform settlement of labor matters which ought to be settled between each railroad and its own employees. The Association also decided to stand clear of national boards of adjustment, declaring itself in favor of decentralization of labor relations.

Following the meeting, Thomas DeWitt Cuyler, chairman of the Association, issued a statement which said:

At its meeting today the Association determined to abolish its labor committee. This action was taken on the recommendation of the committee itself. The committee has now substantially performed its work and its further maintenance is a constant invitation to seek additional and uniform settlement of labor matters which ought to be settled between each carrier and its own employees. Many of these settlements should differ on different railroads and in different parts of the country.

The railroads never have desired national and uniform action on labor matters. But on the termination of federal control they were faced with certain arrangements which had been applied on each and every railroad without variation.

In connection with national boards of adjustment, the national agreements now before the United States Railroad Labor Board, and the wages of unskilled labor, the railroads have been moved by one fundamental policy, namely: the endeavor to restore to the individual managements the opportunity of dealing directly with their own employees and of having a reasonable voice in determining the conditions under which they fulfill their individual responsibilities to the public for efficient and economic management.

Since the whole effort of the railroads' labor matters has been directed toward a reasonable decentralization, with its opportunities for variation in close relation to differing conditions in different parts of the country, the decentralization of the handling of labor problems would seem now to be warranted, and is taken as an evidence of good faith behind the fundamental policy which the railroads have been pursuing.

Jewel Asks Board to Subpoena Labor Committee

B. M. Jewell, president of the Railway Employees Department of the American Federation of Labor, on March 5 asked the Labor Board to subpoena the members of the Association's labor committee, which was abolished, to appear as witnesses when he resumed his reply to the presentation made on behalf of the carriers in the national agreements controversy. The request was filed by Mr. Jewell as an answer to the action of the Association in abolishing the committee.

Several days previous Mr. Jewell filed a letter with the Board charging that the railway executives are in a state of dissension over the question of abrogating national working agreements. He urged that before proceeding further with the cases now pending the Board should rule on the request of the unions for a national conference with the railway managements over the agreements.

The letter charged that a year ago a majority of the railroad executives were in full accord with the union leaders on the question of establishing bipartisan boards of adjustment and declared that Gen. W. W. Atterbury as a "minority of one had ridden roughshod" over the other executives.

"He prepared a minority report," the letter states, "and presumably because of the support which he was able to secure from the financiers who dominate the transportation industry, was able to thwart the will of the other executives, prevent the establishment of the national boards of adjustment, and refuse any conferences on national agreements."

Pennsylvania Proposes Blanket Reductions

The Pennsylvania Railroad has announced its intention to reduce wages not only of unskilled labor but of all employees and officers as well. An announcement issued Wednesday by the Board of Directors points to the necessity of reducing expenses and says, "a foundation for the restoration of normal business cannot be laid until there has been a frank recognition of the real situation and a readjustment of wages

to meet the altered conditions." The announcement read as follows:

In view of the changed economic conditions it is a manifest obligation to the public generally, and especially to shippers, passengers, investors and stockholders, that railroad expenses be reduced. The management of the Pennsylvania Railroad has already made a reduction of over 70,000 men in its personnel, seriously curtailing maintenance of roadway and equipment, consolidated divisional organization and has stopped all expenditures on new work.

Even with such economies as have already been enforced, it takes almost the whole of current earnings merely to pay current operating expenses. It is evident that the requirements of the Transportation Act that railroads shall be administered in an efficient and economical manner cannot be satisfied without still further reductions in expenses. In February, 70 per cent of all Pennsylvania System operating earnings were absorbed by charges for labor against a normal charge for labor of less than 50 per cent of earnings.

A foundation for the restoration of normal business cannot be laid until there has been a frank recognition of the real situation and a readjustment of wages to meet the altered conditions. The more promptly an adjustment to the inexorable facts is made, the more promptly can those who are now idle be re-employed and a basis established for renewed prosperity. In making a readjustment of salaries and wages, it is but fair and proper that the burden should be borne by all officers as well as employees.

It is accordingly resolved that the executive officers of the Pennsylvania Railroad Company are directed to give as promptly as possible proper notice that it is the intention of this company to reduce the salaries and wages of officers and employees to accord with economic conditions.

In readjusting salaries and wages, the management shall have due regard among other relevant circumstances, to

1. The scale of wages paid for similar kinds of work in other industries.

2. The relation between wages and the cost of living.

3. The hazards of employment.

4. The degree of responsibility.

5. The training and skill required.

6. The character and regularity of employment, and

7. Inequalities of increases in wages or of treatment, the result of previous wage orders or adjustments, certain of which items are variable, differing materially as between various localities over so large an area as that covered by the Pennsylvania System. This differentiation shall be recognized in all readjustments.

Such reductions as are made in salaries and wages shall bear an equitable relationship to the increases in pay made since January 1, 1918. The equitable differentials which should apply between various classes of employees shall be maintained or restored.

All procedure in effecting such readjustments of salaries and wages shall be taken in an orderly manner and in strict accord with the Transportation Act.

National Agreements Hearings Continue

The presentation of rebuttal statements on behalf of the clerks, train dispatchers, signalmen and maintenance of way workers continued during the past week. The remarks of the representatives of the United Brotherhood of Railway and Steamship Clerks, Freight Handlers, Express and Station Employees were outlined in the *Railway Age* of March 4, (page 519). E. H. Fitzgerald, grand president of that organization, was followed on the stand by J. G. Luhrsén, president of the American Train Dispatchers Association, who opened his presentation with the charge that the following roads have violated the "existing" agreement with the American Train Dispatchers Association: the Atlanta, Birmingham & Atlantic, the Atchison, Topeka & Santa Fe, the Atlantic Coast Line, the Boston & Maine, the Bessemer & Lake Erie, the Buffalo, Rochester & Pittsburgh, the Baltimore & Ohio, the Chicago & North Western, the Central Vermont, the Chicago, Rock Island & Pacific, the Chicago & Alton, the Central of Georgia, the Chicago Great Western, the Chicago, St. Paul, Minneapolis & Omaha, the Chesapeake & Ohio, the Chicago, Terre Haute & Southeastern, the Chicago, Burlington & Quincy, the Central Railroad of New Jersey, the Denver & Rio Grande, the Detroit, Toledo & Ironton, the Davenport, Rock Island & Northwestern, the Delaware, Lackawanna & Western, the Detroit & Mackinac,

the Erie, the El Paso & Southwestern, the Fort Dodge, Des Moines & Southern, the Grand Trunk, the Georgia & Florida, the Gulf, Colorado & Santa Fe, the Great Northern, the International & Great Northern, the Illinois Central, the Joplin & Pittsburg, the Kansas City Southern, the Long Island, the Lehigh Valley, the Louisville & Nashville, the Los Angeles & Salt Lake, the Missouri, Kansas & Texas, the Missouri, Kansas & Texas of Texas, the Minneapolis, St. Paul & Sault Ste. Marie, the Michigan Central, the Missouri & North Arkansas, the Mississippi Central, the Mobile & Ohio, the Missouri Pacific, the Maine Central, the New York Central, the Northern Pacific, the Nevada Northern, the Oregon Short Line, the Pennsylvania, the Pere Marquette, the Philadelphia & Reading, the Pacific Coast, the Quincy, Omaha & Kansas City, the Southern, the Southern Pacific, the St. Louis Southwestern, the St. Louis-San Francisco, the Spokane International, the Spokane, Portland & Seattle, the Toledo, St. Louis & Western, the Texas & Pacific, the Tidewater Southern, the Utah, the Union Pacific, the Wabash, the Western Pacific and the Western Maryland.

Mr. Luhrsén later supplemented these charges with specific instances in which these individual roads are alleged to have violated various rules of the "existing" agreement.

To a large extent the testimony offered by the organizations so far has been an attempt to refute the statement made by Mr. Whiter to the effect that economical and efficient operation cannot be obtained as long as the national agreements are continued in effect. Mr. Luhrsén voiced the employees' stand in saying, "I charge that the greatest single factor today making for the dissatisfaction of employees is inequality of treatment in the matter of both wages and working conditions by employers. With the elimination of the greatest source of discontent and dissatisfaction you will have gone far toward the securing of employees who will labor in harmonious co-operation for the common good of their employers, and thus have increased the efficiency of the carriers."

That the carriers have taken advantage of the absence of rules and regulations governing the working conditions of train dispatchers to deprive them of the agreed return for their labor, was charged by Mr. Luhrsén in his presentation to the Board.

In support of this charge he cited numerous instances where it is alleged train dispatchers have been deprived of their full pay as interpreted by the employees.

In summarizing his presentation on March 7, Mr. Luhrsén said:

"We have shown that train dispatchers have suffered the disadvantage attaching to both officers and employees without enjoying the advantages of either class. We have demonstrated by actual illustration the injustice that has resulted and is resulting by reason of the lack of rules and regulations at issue before this Board. In clear and unmistakable language we have shown the necessity for, and beneficial effect of, the establishment of these fundamental principles governing the working conditions of train dispatchers. We have pointed out in minute detail the chaos, dissatisfaction, discontent and general inefficiency that will result by failure to establish or maintain these fundamental principles in some concrete form that will permit of their enforcement. We have submitted argument and evidence to refute the theory advanced by the carriers that the establishment of these fundamental principles will in any manner destroy confidential relations between train dispatchers and their superior officers and have uncovered the motives of the carriers in objecting to the establishment of the rules and regulations we have presented here. The distinction of the carriers, despite their repeated statements to the contrary, to negotiate rules and regulations governing the working conditions of dispatchers on the individual properties have been clearly demonstrated.

"We have waited patiently for the carriers to offer any reasonable or sound objection to the establishment of these rules and regulations and have so amended and modified our original presentation as to eliminate those portions to which merited objection was raised by the carriers. The carriers have signally failed to show wherein any single rule is either unfair, impracticable or un-

reasonable and we stand ready and willing either at this late date to so amend or modify our proposed regulations as to eliminate any rule which upon analysis proves unfair or impracticable."

The representatives of the signalmen and maintenance of way workers followed Mr. Luhrs upon the stand. Ab-

stracts of the testimony presented by these organizations will be included in next week's *Railway Age*.

On account of the time consumed in these rebuttal statements, the date of the reappearance of Mr. Jewell before the Board has been postponed until March 14.

What Can Be Done to Reduce Freight Claims

Loss and Damage Payments Becoming Increasingly Larger —Steps Must Be Taken to Reduce Them

By W. P. Holabird

Inspector Freight Claim Dept., Erie Railroad, Huntington, Ind.

THE FREIGHT LOSS and damage claim payments made by the carriers have been increasingly large during the past two or three years. In a measure this increase has been due to the higher market value of the freight transported. Consequently when reductions in market values occur, the carriers will possibly be able to show some reduction in loss and damage disbursements. However that may be, freight claims are much higher than they should be and can be attributed to one or another of 11 general causes, namely, losses from stations, pilferage, careless sealing of cars, errors of employees, rough handling of cars, mishandled waybills, careless inspection of equipment, failure to safeguard perishable freight, neglect in reporting stray shipments, carelessness in handling refrigerator cars, and incomplete bills of lading.

Losses from stations frequently occur when a shipment is unloaded at destination and one or more pieces in the shipment are found to be damaged and are sent to the cooperage shop for reconditioning. These articles are often delayed at the shop and the balance of the shipment is delivered with too brief an explanation of the cause of the delay. The tally, as well as the delivery portion of the freight bill, should contain enough information to enable the delivery clerk to know the exact location of the freight that he would otherwise check short.

Should it develop that a shipment is complete when it is checked out of a car but is short when delivered, the clerk should be notified immediately. The police department should also be notified so as to enable its representative to investigate at once.

All freight house labor, especially at the larger stations, should be required to pass through one gateway or door in going to and from work. Police department representatives should always be present at these times to see that employees do not carry away company property. It is impossible to formulate any special measures which the police department should follow in the discharge of its general duties, as circumstances alter cases in this line of work. But from a freight claim standpoint, there are two very important preventive measures which should be employed. One is a complete and accurate seal record made at all stations. The other is a system for sending to the police department promptly a copy of all damage and short reports when the circumstances indicate pilfering.

Side doors of merchandise cars (except peddler cars) should be secured by a small block of wood at the rear of the door about two feet below the roof of the car. End doors should be cleated on the inside. Cars of merchandise should be assembled in terminal yards and if delay can be avoided these cars should be put into one train. The police department should appoint a representative to ride on these trains periodically over the entire division.

It is advisable to make frequent checks of seal records. This check should be made by obtaining billings from yard officers in terminal yards, not only to find the contents of the cars, but also to determine the car numbers and the junction points where the cars reached the carrier's rails. A complete record of seals should be made at this time. Finally a visit ought to be made to the different junction points to verify the seal record taken by the junction agent in order to discover whether he is properly recording the full reading of the seals.

Waybills Frequently Mishandled

A loading system should be in effect at all merchandise transfers and large stations which will verify the proper loading of each shipment. Such a system falls short, however, unless it is followed by a system of invoicing and mailing of waybills on freight shipped in less than carload lots. It should be made known that waybills are being properly mailed to points where the cars are listed and that there is a waybill for each piece of freight in the car. This refers to all merchandise cars (with the exception of way cars) where the waybills accompany the cars. If freight is shipped to the wrong destination and is buried in the car in such a manner that it cannot be removed at the loading point, the waybill should by all means accompany the shipment to avoid separation of the shipment from the waybill when making its return journey. It is safe to say that 75 per cent of the "over freight" on all railroads is due to the mishandling of waybills.

To prevent freight claims resulting from defective cars, a low grade of equipment should be used for the loading of hides, oil and similar commodities to save cars in good condition for high class merchandise. These low grade cars should be marked, not by a tag or chalk mark, but by a stenciled wood block. Car inspectors should be instructed to assume responsibility for the inspection of all equipment placed for loading, and should keep a record of all cars inspected, showing whether they are fit for loading and if they are, for what class of freight.

Carload perishable freight which is transferred on account of mechanical defects should be placed promptly by yard crews, and the transfer started immediately. In warm weather the car to which the freight is to be transferred should be sufficiently cooled so that the lading will not be injured when the transfer has been completed.

Stray Shipments Must Be Reported

One of the greatest contributors to shortages under loading seals is the failure of junction agents to issue over reports covering stray shipments which are moving to connecting lines. When claims for shortage of entire packages are filed covering shipments destined to foreign lines, there is no

way to locate the route traveled by the shipment if no over reports have been issued.

This difficulty might be overcome by having the agent issuing the stray waybill make the necessary over report. In any event, these shipments should not be delivered without complete proof of ownership. If this is to be secured from consignees by a personal call or a letter, stray waybills should be carefully checked against each shipment to ascertain order numbers, requisition numbers, the name of the shipper and any other information shown on the shipments. They should then be sent to the consignee or shipper with some information that will be of benefit to him in securing the information desired.

A standard form of ice plug should be adopted on all refrigerator cars. To keep the despatchers well posted, all train temperature records should be taken at least every four hours. It might be well for despatchers to send messages to conductors in charge of such trains reminding them when the temperature is at the freezing point, so that they can close all ventilators, except on those cars which are billed to travel otherwise. Standard thermometers should be placed at all water stations and important stations where it is the custom of conductors to look over their trains. This will enable the conductors to keep proper temperature records should it be necessary for them to operate the ventilators while the cars are in their charge.

Periodical checks should be made at junction points and ice houses and also on trains carrying cars under ventilation, to see that the crews are operating the vents properly. This check should be made especially during changeable weather conditions.

Thorough Organization Necessary

The question naturally arises as to how the carriers can accomplish all the preventive measures referred to in this article. Much can be done if every railroad employs a freight claim representative on each division, reporting to the freight claim agent. These men should have station and warehouse experience and should co-operate closely with officers and department heads.

Regular monthly claim prevention committee meetings should be held on all divisions, attended by the heads of all the departments, with the superintendent presiding and the freight claim department representative acting as secretary. All business brought up at these meetings should be carried on the minutes until it has been disposed of or corrected. In addition to this, a general committee should be organized consisting of officers having jurisdiction over two or more divisions, to handle all matters that cannot be taken care of by the divisional committees.

To prevent claims, we must prevent the causes which lead to claims.



American Red Cross First Aid Train at Krasnoyarsk, Siberia

"The Spirit of Safety First"*

By Charles E. Norman
Switchman

SAFETY FIRST should be the uppermost thought of employees at all times. It is our duty to use safe methods of doing our work so as to avoid accident and keep our casualty lists down. Mistakes will sometimes be made which cause an accident. Mistakes can be remedied, but the loss of life or limb to a fellow employee and the loss by damage to property cannot be replaced. So let us study the cause, discuss it with fellow employees, get in harmony with one another and try to make the Safety First spirit dominate our every act.

Many accidents are the result of some employees taking a chance. In my judgment this is one of the greatest debits against Safety First. Chance has no place in railroad work. The man who takes a chance will get in bad sooner or later.

If an accident is caused by a defect in track or equipment, report the facts at once to the proper officer, so that it and similar defects may be corrected at the earliest moment. If caused through negligence, free discussion will cause other employees to be on the alert.

Many personal casualties are the result of bad practices which should be avoided. These are the ones we are trying to correct. You are all familiar with them but I want to mention one or two in particular; I refer to employees not familiar with the movement of engines and train trying to hit the footboard of a fast approaching engine or trying to grab the side ladder or steps of fast moving train and giving us a shock that is to say the least unpleasant. I am sure the men who belong on the footboard do not encourage it, but we should go farther and warn inexperienced men not to take these chances. We footboard men already on the engine should also give the fellow employee about to get on the footboard plenty of room to land safely.

Another point I wish to emphasize is a strict compliance with the rules and regulations of the company. If we study the rules and all understand them alike we lessen the danger of a misunderstanding and possible accident.

After a day's work without an accident or casualty we go home in a happy frame of mind and it reflects on the family and all about us—it's contagious. On the other hand, after an accident we go home out of sorts and if we are responsible and it is serious and we get crippled or lose our job, prosperity stops right there and in place of happiness there is gloom and despondency. Therefore, if for no other reason, we owe it to our families to keep the Safety First spirit alive and it ought to have first place on our seniority list.

We have been hearing a great many comments on Safety First—some good and some bad—but I am glad to say the good is in the majority. Let us hope it won't be long until they are all good. The knocker knows right down in his heart that he is wrong. He knows he would not last long on a railroad if he followed unsafe methods. So let us meet the issue square-faced. Don't beat around the bush with it. Get right down to honest, fair-minded safety work. It means so much to all of us and those dependent on us.

I often wonder how many of our terminal employees read a new time table. I try to read all of them and yet I found something in the last one I did not know or had overlooked. It's a good reminder on Safety First, so don't pass it up idly—read it and digest it with the other rules and regulations.

Finally, let me say that Safety First goes beyond the conservation of life and limb—it brings out efficiency, economy and co-operation. What more can officer or employee expect? Let us all make it our signal board and always try to have a clear board.

*Paper presented at the Chicago Terminal "Safety First" Meeting of the Chicago & Alton, on February 4, 1921.

The Cost of Reproduction New of Steel Freight Cars

Method Developed by Presidents' Conference Committee Permits
Ascertainment on Basis of Weight

THE EQUIPMENT COMMITTEE of the Presidents' Conference Committee on Federal Valuation has recently issued its studies on the Method of Determining the Cost of Reproduction New of All-Steel Freight Cars*. The report deals with gondola, hopper, coke and tank cars but not with box cars. The interesting feature is that the committee has worked out a method whereby a price is figured based on the weight of a so-called base car and to which price are added certain net figures to cover the cost of the specialties. This is an adaptation of the method used for determining the cost of locomotives, which method was described in the *Railway Age* of September 3, 1920, in an article entitled "The Cost of Locomotives for Valuation Purposes."

The present report was worked up in co-operation with two of the leading car building firms. These two firms were requested to furnish information as to all-steel freight cars of the classes noted as follows: (1) Description of the so-called base car; (2) list of the specialties; (3) light weight

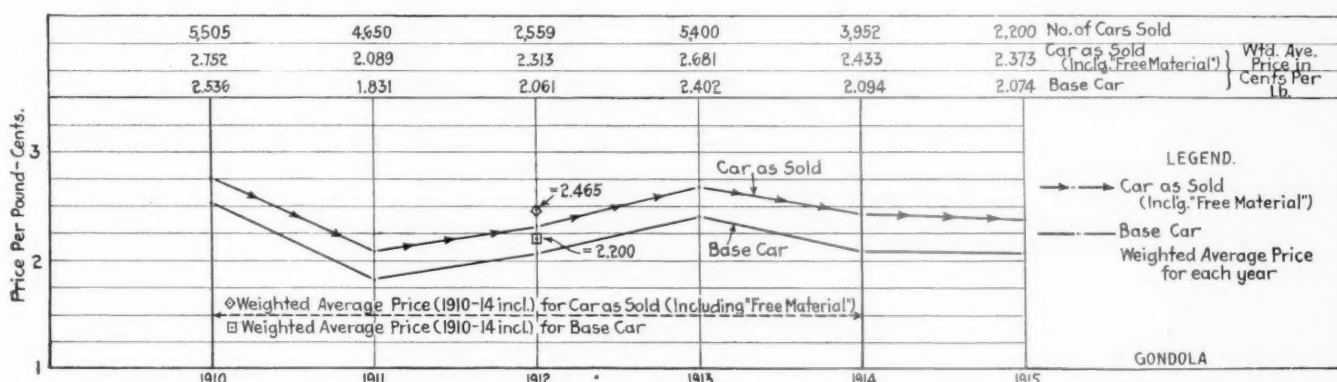
The sub-committee having the work in hand was thus furnished with data covering sales of 84,158 all-steel freight cars of a total light weight of 3,552,118,237 lb.

The Base Car

The term "base car" as worked out was meant to cover a car of simple design selected so as to reduce the data to a common basis.

The "specialties" are those parts not included in the base car, or parts similar to parts on the base car but of different construction, weight or cost. It is noted in the report that "as further explanation a 'specialty' item might properly be called an 'accessory' similar to the term commonly used in the automobile business."

Several pages of the report are devoted to a list of the "net prices" of the specialties and the list in question will be found below. The net price of a specialty is a figure obtained by deducting from the excess price of the specialty its excess weight multiplied by 2.5 cents, the average price



Weighted Averages for the All-Steel Gondola Car

of each car sold 1910 to 1915, inclusive; (4) date of contract for each sale of 100 cars or more from 1910 to 1915, inclusive; (5) price per pound of the base car for each sale of 100 cars or more from 1910 to 1915, inclusive.

This information was asked for each sale of all-steel cars in the period mentioned 1910 to 1915 with the following exceptions: (a) All cars sold to foreign countries, except to Mexican and Canadian railroads operating lines in the United States; (b) all cars sold to industries, except those used in interstate traffic, and (c) all sales less than 100 cars.

*This report was prepared by a sub-committee, consisting of:
H. E. Hale (chairman), engineer, Eastern group, Presidents' Conference Committee.

K. C. Gardner, manager of sales, Central district, Pressed Steel Car Company.

W. R. Maurer, engineer, equipment and machinery, New York, New Haven & Hartford.

T. P. McCormack, general manager's department, Pressed Steel Car Company.

A. W. Neel, assistant engineer, Eastern group, Presidents' Conference Committee.

J. I. Sutherland, chief estimator, Standard Steel Car Company.

A. W. Wille, sales department, Standard Steel Car Company.

W. L. Wilt, special accountant, Pennsylvania Railroad.

and was reviewed and approved for distribution by the equipment committee, consisting of:

J. Howland Gardner (chairman), vice-president, New England Steamship Company.

P. F. Smith, Jr., works manager, Altoona shops, Pennsylvania Railroad.

W. J. Tollerton, general mechanical superintendent, Rock Island lines.

F. O. Walsh, superintendent motive power, Atlanta & West Point Railroad.

W. H. Wilson, assistant to vice-president, Northern Pacific Railway.

W. L. Wilt, special accountant, Pennsylvania Railroad.

H. E. Hale (secretary), engineer, Eastern group, Presidents' Conference Committee.

per pound of the base car for 1910 to 1915. (The average "base car price" of 2½ cents applies to the determination of the net price of the specialties only.) The excess weight and price of the specialty as referred to, are the difference in the weight and price of the base car device and the specialty device. This is pointed out possibly more clearly by the following example:

Item	Weight	Price
Specialty—KC 1012 Westinghouse air brake.....	415 lb.	\$35.75
Base Car Part HC 812 Westinghouse air brake.....	305 lb.	23.00
Difference (Increase)	110 lb.	\$12.75
110 lb. multiplied by 2.5 cents.....		2.75
Net price of specialty.....(plus)		\$10.00

In arriving at the allowance for specialties and component parts of cars purchased, the actual average prices were used. The weights were ascertained from manufacturers, railroads and by actual weights determined by car companies.

The term "light weight" of the car refers to the manufacturer's weight as the car left the shop and is the weight upon which the unit prices in the report are based. In estimating the "cost of reproduction new," it is noted that the manufacturer's weight should be used, and where additions and betterments have been added, due allowance should be made for additional weight of the additions and betterments, if any.

On a rebuilt car, or where the character of the car:

has been changed, the weight of the rebuilt car as it left the shop where it was rebuilt must be used.

All prices as given in the report are f.o.b. car companies' works. The date of contract of sale was used in the report, in classifying the data by years.

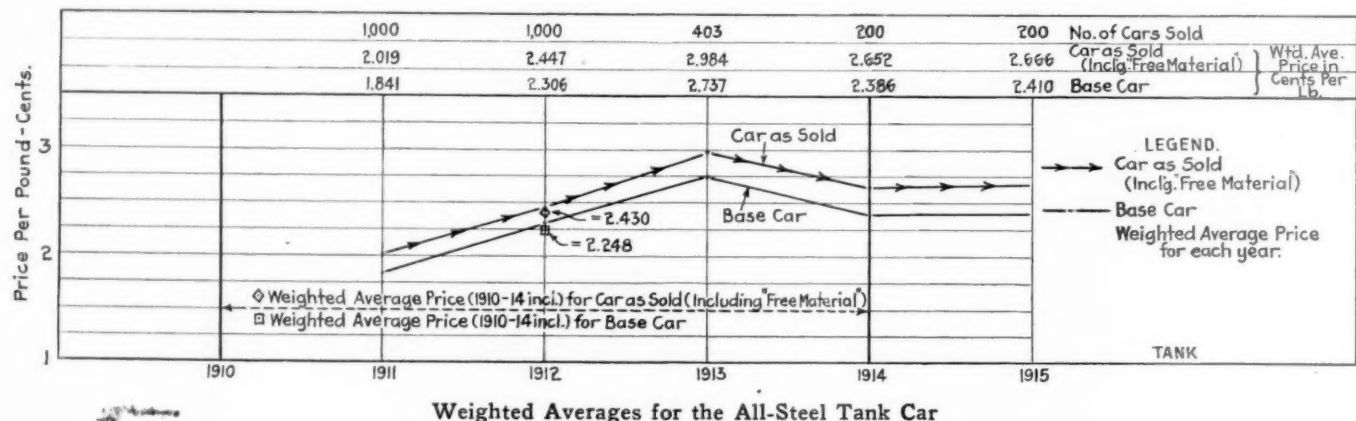
The price per pound of the base car for each sale was obtained by deducting the total net price of all specialties from the total price of the car as sold by the car manufacturer (including "free material") and dividing by the total light weight of the car as it left the shop. Any so-called "free material" that may have been furnished by the carriers was allowed for by setting up an amount equal to that which

The following example illustrates the method:

(1) Price paid the manufacturer, which does not include "free material".....	\$864.00
(2) Price of "free material" furnished by the carrier.....	76.00
Total.....	\$940.00
(3) Total net price of all specialties.....	60.00
Total price of base car for one sale.....	\$880.00
(4) Light weight of car as it left the shop.....lb.	40,000
(5) Price per pound of base car for one sale, \$880.00, divided by 40,000 lb.....	2.2 cents

Price Per Pound Not Influenced by Car Weight

Diagrams and studies were made for the consideration of the sub-committee and the equipment committee, showing



would have been charged by the car manufacturer, if the car manufacturer had furnished this material. (Note: In making up these prices for so-called "free material," no account has been taken of any special discounts that may be given to a particular carrier.)

the trend of prices, which indicated that the price per pound was not influenced by the total weight of the car; therefore, it was decided to give a weighted average price per pound for each year and also for the five-year period 1910 to 1914, inclusive. An average price curve on locomotives for the

LIST OF SPECIALTIES FOR ALL-STEEL FREIGHT CARS

Item No.	Description of Specialty	Years 1910 to 1915, inc. Net prices per car		
1	Air Brake (Base car—Westinghouse H.C.—812 or H.D.—812)		21	2 Harvey draft springs—all sizes..... 13.00
2	Westinghouse K.C.—812 or K.D.—812.....	\$5.00	22	4 Harvey draft springs—all sizes..... 26.00
3	Westinghouse H.C.—1012 or H.D.—1012.....	5.00		Draft Gears
4	Westinghouse K.C.—1012 or K.D.—1012.....	10.00		(Base car—tandem 8-in. by 8-in. or 6¼-in. by 8-in. made by car builder)
5	New York F—8—C..... See note (a)	5.00	23	Cardwell friction—all types..... 17.00
6	New York F—8—C K triple.....	5.00	24	Farlow single spring..... 17.00
7	New York F—10—C or F—10—D.....	5.00	25	Farlow heavy twin spring..... 19.00
8	New York F—10—C K triple.....	10.00	26	Farlow-Westinghouse..... 36.00
9	Axles (Base car—all sizes—smooth forged between wheel seats)		27	Farlow-Forsythe—all types..... 30.00
10	Rough turned between wheel seats.....	4.00	28	Farlow-Forsythe..... 36.00
11	Brake Adjuster (Base car—none)		29	Forsythe friction..... 17.00
12	Acme.....	8.00	30	Gould friction..... 11.00
13	Brake Beams (Base car—rolled I-beam or similar section)		31	Gould-Farlow..... 32.00
14	Trussed brake beam—all makes.....	5.00	32	Miner tandem—all types..... 12.00
15	Brake Masts and Hand Brake Ratchets (Base car—ordinary arrangement with malleable brake wheel)		33	Miner twin spring..... 12.00
16	All patented brake shafts and hand brake ratchets, such as Feasible, Ureco, Blackall, H.R. and Perfection.....	3.00	34	Miner friction—all types..... 25.00
17	Bolsters—Body (Base car—pressed or structural steel)		35	Murray friction..... 16.00
18	Cast steel.....	19.00	36	Sessions friction—all types..... 12.00
19	Bolsters—Truck (Base car—pressed or structural steel)		37	Waugh friction..... 17.00
20	Cast steel—all makes.....	20.00	38	Westinghouse friction..... 15.00
21	Simplex.....	20.00		Draft Gear, Body Bolster, Etc. (Combination)
22	Note—(a) Price and weight same as base car device, or extra price offset by extra weight.			(Base car—structural or pressed steel body bolster, ordinary draft sills and forged yoke)
23	Center Plates (Base car—ordinary type)		39	Commonwealth combination cast steel transom draft gear and body bolster, including coupler extension and draft yoke..... 60.00
24	All roller center plates.....	12.00		Ends, Steel (Patented)
25	Coupler Centering Device (Base car—none)			(Base car—plain steel, fixed or drop ends)
26	Any patented coupler centering device.....	6.00	40	Any patented steel end on gondolas or hoppers..... 23.00
27	Coupler Operating Device (Base car—ordinary arrangement)			Journal Boxes
28	Patented devices, such as Imperial, Carmer, etc.....	3.00		(Base car—cast iron—all sizes)
29	Coupler Yoke (Base car—forged yoke)		41	All boxes of any size other than cast iron..... 10.00
30	Cast steel—all makes.....	5.00		Roller Device for Truck
31	Universal draft attachment with cast steel yoke.....	8.00		(Base car—none)
32	Cross Ties (Base car—structural or pressed steel)		42	Barber roller device with 2 or 3 rollers..... 6.00
33	Cast steel cross ties on all cars.....	16.00		Side Bearings
34	Draft Springs (Base car—ordinary types of round section)			(Base car—friction type)
35			43	Any patented roller side bearing..... 8.00
36				Side Frames
37				(Base car—arch bar type)
38			44	Andrews or other similar type cast steel frames..... 34.00
39			45	Bettendorf cast steel frames, including spring planks.... 80.00
40			46	Scullin cast steel side frame with divided journal box... 41.00
41				Sills, Erd
42				(Base car—structural or pressed steel)
43			47	Cast steel end sills on all cars..... 28.00
44				Sill Pockets
45				(Base car—none)
46			48	Westinghouse railway equipment—malleable iron..... 4.00
47				Wheels
48				(Base car—33-in. cast iron of any weight)
49			49	Rolled steel, 33-in..... 47.00
50			50	Cast steel, 33-in..... 124.00

period 1910 to 1914, inclusive, was requested by Director C. A. Prouty of the Bureau of Valuation and for that reason a similar average for the freight car data was prepared.

In line with the foregoing, diagrams were prepared showing the yearly weighted average price per pound of the base freight car—all steel (also car as sold, including "free material"). The total output of the two car companies was used (excluding certain cars as previously stated) and data was grouped by years according to date of contract of each sale. These diagrams are given in this article and are shown for gondola, hopper, coke and tank cars. Figures for box cars are not shown.

Method of Determining Prices 1916 to 1920

Having thus worked out the method of determining the costs of the car for the period 1910-1914, inclusive, the com-

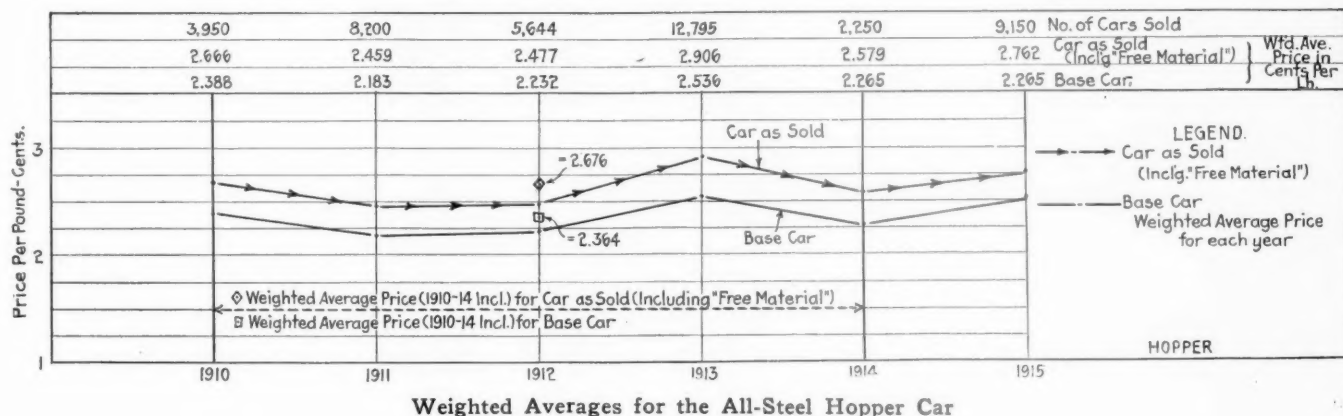
material," for the all-steel freight cars mentioned in above paragraph (a).

From the above information the following data was prepared:

Year	No. of cars sold	Wt. aver. price per pound of car as sold (incl. "free material")	Percent of price, 1910 to 1914, incl.
1910 to 1914, incl.	71,108	2.57 cents	100
1916	21,307	4.01 cents	156
1917	4,750	5.11 cents	199
1918	12,383	6.36 cents	247
1919	None		
1920 (1st 6 mos.)	2,900	7.70 cents	300

Note—No sales of all-steel freight cars were made by these two companies in 1919.

The period of 1910 to 1914, inclusive, was selected as the base period for determining the range of prices in other years, largely due to the fact that there was available a large amount of information for that period on which to establish

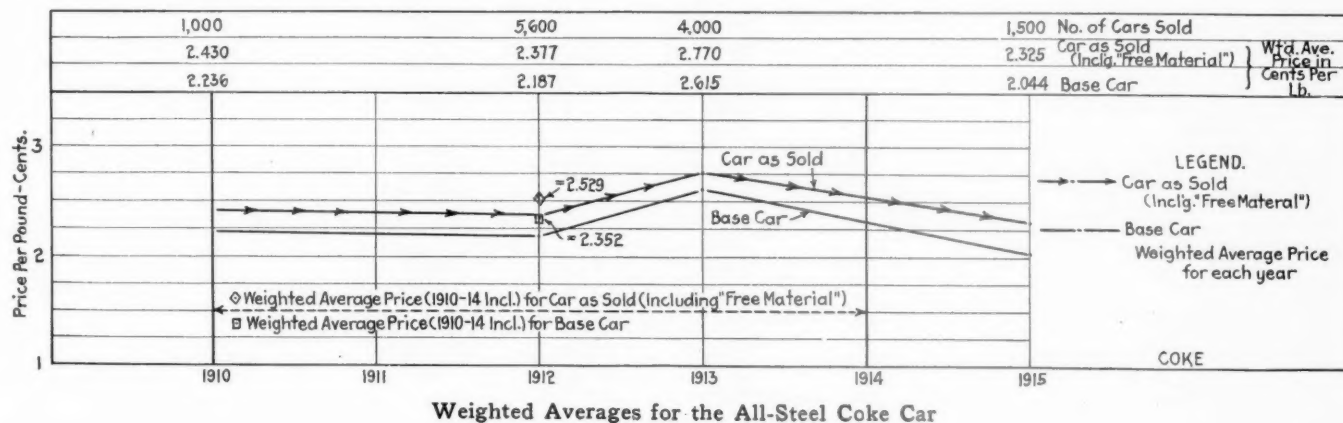


Weighted Averages for the All-Steel Hopper Car

mittee was next called upon to establish a guide for determining the cost of reproduction new for the years following.

On account of war conditions, etc., causing very erratic fluctuations in the prices of cars and more especially prices

a base. Other base periods for index numbers have been used by the government, such as 1890 to 1899, inclusive, or the year 1913, etc., and it should be clearly understood, it is noted in the report, that nothing in the report is intended



Weighted Averages for the All-Steel Coke Car

of specialties pertaining thereto, the equipment committee felt that it was not advisable to attempt to set up a base car price with an accompanying net price of specialties for the years subsequent to 1915. It was therefore decided to present a trend in prices of cars showing the increase in average price for the years 1916 to 1920, inclusive, over the average price of 1910 to 1914, inclusive, taken as base or 100 per cent. For this period, the following data was secured from the two car manufacturers:

(a) Total light weight of all-steel freight cars sold by them for each calendar year for the period 1910 to 1920 (first six months) inclusive, including certain sales as before mentioned.

(b) The total price received including the so-called "free

to suggest that the 1910 to 1914, inclusive, period should be a pricing period for valuation purposes.

A Typical Example

With this information available it becomes a simple matter to determine the cost of reproduction new for any year from 1910 to the first six months of 1920.

(a) All steel gondola car, 100,000 lb. capacity, light weight 42,000 lb. at 2.20 cents (1910 to 1914, inclusive, weighted average price)	\$924.00
(b) Coupler centering device, patented	6.00
Coupler operating device, patented	3.00
Bolsters, cast steel truck	20.00
Side frames, patented cast steel truck side frames (Andrew's)	34.00
Draft gear, Miner tandem	12.00
Brake beams, M.C.B. of patented design	5.00
Brake equipment, Westinghouse K.C.—1012	10.00
Side bearings, patented design (Wood's body)	8.00
Roller device, Barber (3 rollers)	6.00

(c) Carrier's cost of inspection during construction, and inspection and testing of materials.....	4.00
(d) Cost of engineering	6.00
Total.....	\$1,038.00
(e) For 1918 apply 24.7 per cent.....	2,564.00
(f) Add freight charges, using 1918 tariff rates, from manufacturer's shop to carrier's line or point of distribution, determined by the construction program (unless cars to carrier's lines are, under a proper construction program, delivered under load).....	18.00
(g) Total "cost of reproduction new" of all-steel gondola car in 1918	\$2,572.00

gestions made while the transportation act was under consideration, for the creation of a department of transportation with a cabinet officer at its head, which would place the whole subject of transportation within the responsibility of a cabinet officer who would be much more closely in touch with the executive than an independent organization such as the Interstate Commerce Commission.

Reorganization of Department of Commerce to Include Transportation

WASHINGTON, D. C.

HERBERT HOOVER, the new Secretary of the Department of Commerce in President Harding's cabinet, is working out plans for the reorganization and enlargement of the activities of the Department of Commerce, which it is understood will be announced very shortly, which will give his department a considerable degree of jurisdiction over the subject of transportation in all of its phases. Mr. Hoover,

Freight Car Loading

WASHINGTON, D. C.

THE NUMBER OF CARS loaded with revenue freight continues to decline, according to the reports compiled by the Car Service Division of the American Railway Association for the week ended February 26. The total for that week was 658,222, as compared with 695,506 for the previous week, but a large part of the reduction is undoubtedly accounted for by the holiday on Washington's Birthday. For the corresponding week of 1920, the loading was 783,295 and for 1919 it was 666,708. The summary follows:

REVENUE FREIGHT LOADED AND RECEIVED FROM CONNECTIONS

SUMMARY—ALL DISTRICTS, COMPARISON OF TOTALS THIS YEAR, LAST YEAR, TWO YEARS AGO AND FOR WEEK ENDED SATURDAY, FEBRUARY 26, 1921

Districts:	Year	Grain and grain products	Live stock	Coal	Coke	Forest products	Ore	Merchandise L.C.L.	Miscellaneous	Total revenue freight loaded			Received from connections		
										This year 1921	Corresponding year 1920	Corresponding year 1919	This year 1921	Corresponding year 1920	Corresponding year 1919
Eastern	1921	5,830	2,260	38,352	866	7,953	566	41,522	51,402	148,751	173,087	160,693	168,781	210,430	231,433
Allegheny	1921	5,040	3,243	48,468	3,492	5,122	1,847	26,360	79,515	132,362	166,643	142,752	87,147	123,252	164,027
Pocahontas	1921	2,517	2,783	42,131	4,952	3,106	2,176	30,827	43,870	132,362	166,643	142,752	11,188	17,392	21,759
.....	1920	2,752	2,970	49,790	3,827	4,032	2,525	34,069	66,678	111,567	124,993	103,393	57,881	79,615	63,322
.....	1919	166	87	13,602	67	1,409	37	2,228	4,861	22,457	31,116	28,208	11,188	17,392	21,759
Southern	1921	142	138	19,095	641	1,859	230	141	8,870	111,567	124,993	103,393	57,881	79,615	63,322
.....	1920	4,569	1,969	21,811	555	13,731	815	36,137	31,980	111,567	124,993	103,393	57,881	79,615	63,322
.....	1919	3,503	2,290	24,274	145	16,694	2,566	20,127	55,394	111,567	124,993	103,393	57,881	79,615	63,322
Northwestern	1921	11,000	8,425	5,601	1,326	16,120	1,129	23,120	25,417	92,138	111,124	98,568	41,607	58,935	77,014
.....	1920	10,243	8,023	11,511	1,180	19,721	1,715	19,283	39,448	111,124	111,124	98,568	41,607	58,935	77,014
Central Western	1921	12,570	9,826	16,220	219	2,896	2,035	25,402	27,743	96,911	118,222	88,687	43,245	67,555	66,238
.....	1920	9,044	9,803	23,715	426	5,746	2,392	21,729	45,367	96,911	118,222	88,687	43,245	67,555	66,238
Southwestern	1921	4,566	1,535	4,509	124	6,042	438	14,442	22,380	54,036	58,110	44,407	38,494	51,297	50,841
.....	1920	4,029	2,309	6,060	198	6,932	556	14,523	23,503	54,036	58,110	44,407	38,494	51,297	50,841
Total, all roads.....	1921	41,218	26,885	142,226	8,109	51,257	7,196	173,678	207,653	658,222	783,295	666,708	448,343	608,476	674,634
.....	1920	10,243	8,023	11,511	1,180	19,721	1,715	19,283	39,448	658,222	783,295	666,708	448,343	608,476	674,634
.....	1919	29,445	31,981	138,356	.....	52,866	13,828	.....	400,232	658,222	783,295	666,708	448,343	608,476	674,634
Increase compared 1920	1920	6,465	.....	.....	.....	.....	.....	37,446	.....	.....	.....	.....	.....	.....	.....
Decrease compared 1920	1920	.....	1,891	40,687	1,800	8,849	4,635	.....	111,122	125,073	.....	.....	160,133	.....	.....
Increase compared 1919	1919	11,773	.....	3,870	8,109	.....	.....	172,678	.....	.....	.....	.....	.....	.....	.....
Decrease compared 1919	1919	5,096	.....	.....	.....	1,609	6,632	.....	192,379	8,486	.....	.....	226,291	.....	.....

L.C.L. merchandise loading figures for 1921 and 1920 are not comparable as some roads are not able to separate their L.C.L. freight and miscellaneous of 1920. Add merchandise and miscellaneous columns to get a fair comparison.

February 19	1921	36,059	27,892	146,438	8,735	54,417	11,702	187,064	223,199	695,506	772,102	700,913	471,877	579,452	540,123
February 12	1921	32,879	27,456	151,786	9,026	53,882	8,094	184,892	213,612	681,627	786,633	687,128	488,983	610,331	537,109
February 5	1921	34,875	31,277	155,917	10,381	54,066	8,501	182,221	217,759	696,997	762,680	692,614	495,860	599,454	551,312
January 29	1921	39,830	32,368	162,652	9,749	53,677	7,693	179,123	214,844	699,936	803,332	718,297	489,184	589,838	577,709

in announcing his acceptance of a cabinet office, stated that he had stipulated that he should be left free to carry out some of his ideas for reorganizing the department, which included the possibility of taking over some of the functions exercised by other departments, and President Harding has stated that he is in sympathy with the general idea.

Mr. Hoover's plans are understood to contemplate the division of the present Bureau of Foreign and Domestic Commerce into two bureaus, one for foreign commerce and one for domestic commerce, the latter of which it would be his purpose to make an important factor in the development of the whole field of domestic commerce. In this department the plan provides for a sub-bureau of transportation which would co-operate with the Interstate Commerce Commission and the Shipping Board for the purpose of effecting a greater degree of co-ordination between rail and water transportation, including inland water transportation now under the jurisdiction of the War Department, as well as in the government regulation of transportation.

Such a plan as is proposed by Secretary Hoover would to some extent carry out the idea which was behind the sug-

The car surplus for the week ending March 2 declined slightly to 413,450. The week before it was 423,193.

Virginian 120-Ton Cars

AMONG THE illustrations accompanying the description of the 120-ton coal cars for the Virginian, published in the issue of February 18, there is a plan and side elevation of the body, which appeared on page 402. Several incorrect dimensions are shown on this drawing. The distance from the center line of the body bolster to the striking plate, should be 7 ft. 3½ in., instead of 6 ft. 11 in. The distance between truck centers should be 36 ft. 1¾ in. and not 36 ft. 10¾ in. Both these dimensions are correctly given in the details of the underframe on page 404. The wheel base of the truck is shown on the drawing of the car body as 8 ft. 8 in., whereas the wheel base of the Buckeye truck used was 8 ft. 6 in., of the Lewis truck 9 ft., and of the Lamont truck, 8 ft. 3 in.

A Reduction of Rates vs. Improved Service

Interesting Railway Income Catechism Used by R. B. A. in Argument Against Decrease

ISSUE HAS BEEN TAKEN by the Railway Business Association with those who believe that a reduction in railway rates should be made for the purpose of encouraging traffic over the railroads. It believes that while there is a possibility that such a reduction in rates might expedite the resumption of business in 1921 by a few weeks or months, the step would be at a too great risk. "America's contribution to civilization," it says, "is to give American railroads an opportunity to rebuild the system so that they can face with confidence the approaching strain of traffic burden which is to make or break non-government roads in this country." This objection to any proposal to decrease rates is contained in a circular recently distributed to members of the organization. The bulletin is entitled "Making or Breaking the Railroads." The introduction is signed by Alba B. Johnson, president, and one of the features of the bulletin is a Railway Income Catechism prepared by Frank W. Noxon, secretary of the organization:

An abstract of the bulletin follows:

Making or Breaking the Railroads

There is a serious proposal to reduce transportation rates. The aim as set forth is to affect favorably the return of normal traffic movement. Most often this is accompanied by the assumption that there will be a reduction in railway wages and is predicated upon other economies hoped for.

Net Income the Crux

To you it need not be said that any plan of rate reductions will invite headlong national disaster unless considered in the light of its competently estimated effect upon one basic essential—*net railway operating income*. If we ignore *net railway operating income* we may hasten general business resumption by a few weeks or months in 1921, but in doing it we may break transportation down at the next peak of load, bringing an irresistible demand for government seizure.

There is nothing upon which to base an expectation that with operating costs as they now are 100 per cent capacity tonnage would net the railroads 6 per cent income on the present rates, any more than capacity tonnage yielded 6 per cent in September, when the disparity was \$33,000,000, or in October, when the disparity was \$20,000,000—two record months neither of which had been previously exceeded even during the war. Little more could be carried now than was carried in September. The roads have waited for overdue payments on the guaranty from the government. Beginning with September, shortages of income have dictated prudence. Hence the roads have been doing little or no construction. At lower rates, with present carrying capacity, the failure to yield 6 per cent would be still wider. Nor is there certainty or even probability that a reduction of rates would bring 100 per cent capacity tonnage. The depression is due to other and deeper causes. It began, indeed, with a downward curve in merchandise purchases as early as June (some compilers say May 15). Wage reductions are too dubious a possibility to count upon.

Shall Roads Equip Themselves?

Our railroad problem is primarily to make the experiment prescribed by Congress and which is now being conducted by the Interstate Commerce Commission. What tonnage the roads carry now or a few weeks from now is of secondary

importance. The foremost question is whether they shall equip themselves to carry the cargo—vastly greater than all previous demands—which as history repeatedly shows will again overwhelm them almost before we are conscious that unemployment and commercial failures are waning. In any event to project a reduction in rates now, with hearings and consideration consuming nobody knows how long, would not stimulate any business to which rates are of consequence, but put a brake upon it, as does a pending bill to change the customs tariff or as does an unstable price situation.

Continuity of Policy

Our besetting sin in America, as with the peoples of every clime and every age, is to clutch at the immediate and forget the permanent. The problem of administering regulation is to require the railroads to treat the citizens fairly and so to treat the railroads that they will be able to serve the citizens adequately. This balance involves underlying principles which will take a long time to work out. They can only be applied with ultimate success if public policy be continuous and measurably indifferent to momentary shifts in business conditions. The public should regard the Interstate Commerce Commission as an engineer, who is employed for a specific function, who is hungry for information, but who is likely to know a great deal more about the actual needs and the sufficiency of given means for attaining stated ends in this field than all the rest of the nation individually or collectively.

It may be that a wiser organization of federal regulatory agencies could have been made. The Railway Business Association was among those who urged Congress to make a different arrangement. But this is the arrangement Congress did make. We must take somebody's technical judgment. The thing now is to get in behind the commission for a full trial of what Congress has authorized it to undertake. The integrity of the commission, a national boast before the Act was signed, was never more signally exemplified than when some of those members who had not favored the aims of the Act promptly announced their determination to execute it with zeal and joined in electing as transition chairman out of his rotary turn the Commissioner who had been the spokesman for the commission before committees of Congress. That these pledges have been scrupulously kept is the impression of an overwhelming majority of shippers' representatives whose occupation involves contact with the commission's work.

Transfer of Initiative

What is that work in relation to rates? A very different responsibility from what it was under the old act. One of the most difficult conceptions for writers and others to fix in their minds is that Congress has transferred the initiative in revenue rate adjustments. Congress places this initiative not upon the railroads, where it formerly rested, but squarely upon the commission. Those proposing rate reductions have referred to the roads as having carried on a campaign for advances and gotten all that they asked for. This comment discloses a misunderstanding of the new act which calls for earnest efforts toward its correction. The commission ordered a proceeding. It invited all concerned to participate in hearings, including not only the railroads but the shippers. It decided the valuation basis upon which to compute the net income percentage. It chose as between $5\frac{1}{2}$ per cent

and 6 per cent in favor of 6 per cent as the net income to be aimed at. Finally it directed the carriers to file tariffs accordingly. In other words, the people of the United States, acting through an agency created by their Congress, on their own motion took up the question whether railroad income and railroad rates were adequate in the national interest and required the railroad companies to correct in a prescribed manner such inadequacy as had been found.

The public cannot better provide for its own welfare than by strengthening the hands of its chosen agent and protecting that agent from one of the easiest types of clamor to stimulate and one of the hardest to deal with—clamor for rate reductions without consideration of railroad responsibilities to the public or of railroad income wherewith to discharge those responsibilities.

Stability of Rates Essential

The Commission aims at 6 per cent. It makes transportation rates which it computes will suffice, supplemented by economies, to approximate that income. Not every month. Not every year. To shippers stability of rates is as essential as avoidance of excessive rate levels. The commission could not if it would and would not if it could constantly slide the rate level up and down responsive to temporary business fluctuations. Bonds run for years. The money with which to pay interest upon them is the aggregate of sums earned in all the years of the period. The proceeds of a stock issue (if our railroads shall ever again be able to sell stock) is determined by the conjecture of investigators and their advisers as to the net income which will on the

average through years to come be available for dividends. One of the obligations of the commission is to observe how the rate level acts in times of various tonnage volume. They are only at the vestibule of their experience with the rates which were made effective last August. Imagine a family crowding around the physician every few hours and entreating him to turn from the remedy he has given and try something else before the first has shown what it can do.

Net railway operating income is the indispensable theme for adequate consideration in discussing any proposal for rate reductions. Net railway operating income must in future attract more capital than has been attracted to our railroads in years past or—

First—we shall lose our transportation primacy;

Second—we shall lose our foreign trade opportunity, which is utterly dependent upon our domestic superiority in every process cognate to manufacture, including inland rail transportation;

Third—we shall lose our private ownership of railroads and with it our individual initiative, followed by rapid loss of private control and of individual initiative in other lines of business if not in all;

Fourth—we shall take the swift final step to loss of our representative political institutions.

Is it worth while to expedite the resumption of business in 1921 by a few weeks or months at such risk?

America's contribution to civilization is to give American railroads an opportunity to rebuild the system so that they can face with confidence the approaching strain of traffic burden which is to make or break non-government railroads.

Railway Income Catechism

Q. Are not railway rates too high?

A. Some rates, perhaps. Others are perhaps too low. The Interstate Commerce Commission is constantly correcting such inequities.

Q. But are there not particular rates that impede or stop freight movement?

A. Yes. The rate on news print paper from Maine to Chicago impedes the movement; it prevents it. Wisconsin takes the Chicago market. The rate on shoes from Brockton to Denver may be too high for Brockton to compete with St. Louis in the Denver market. If so the rate stops the movement. Brockton would then have its selling area restricted by a development just as truly economic as was the establishment of shoe factories at St. Louis.

Income the Test

Q. Ought not rates to be made so as to move the business?

A. Yes, if the business ought to move.

Q. What is the test whether a given business ought to move or not?

A. Generally speaking, whether total net railway income can be kept at the required point in case that business is moved at a rate which will move it; in other words (if the rate adds nothing to railway income), whether giving an unduly low rate to one kind of business either will create new and profitable business in related directions sufficient to offset the lost revenue or can be made up by rate increases on existing traffic. More volume of tonnage as such has no value to the railroad or to the general public. The public stake is primarily in having a railroad at all and in keeping it at service pitch. The railroad's stake is in earning enough net income to maintain and improve itself so that service can be satisfactory.

Q. Who is to judge what traffic shall move and what shall not?

A. The Interstate Commerce Commission.

Q. Upon what does the Commission base its judgment?

A. Thirty years' experience and present continuous contact with all kinds and conditions of shippers and railroads.

Too Soon to Judge New Rates

Q. As a matter of fact is not the whole level of rates too high?

A. Nobody knows yet. The Interstate Commerce Commission fixed the present level so short a time ago as August 26, 1920. Their function was and is to find out whether that level will in fact as they believed and hoped yield to each group of railroads as a

whole 6 per cent on the value of the aggregate property. The demonstration has only begun.

Q. But is it not evident already that earnings from the present rates are disappointing?

A. Those who hoped that there might not be a depression in tonnage just yet are disappointed that one came so soon; but everybody knew there would be depressions; and it can hardly be called a disappointment to have a slump in earnings with a slump in traffic.

Income Disappointing, Not Earnings

Q. Was not October, 1920, a great traffic month and was not October railway income disappointing?

A. Precisely—railway income; but not railway earnings. The tonnage produced gross—record gross—but expenses ate it up. Income lacked \$20,000,000 of 6 per cent. Whether traffic moving at present rates will or will not yield 6 per cent will depend upon (1) how often the tonnage reaches capacity of the roads to haul it and how long it continues at capacity, (2) how severe and how protracted are the slumps and, (3) how much decrease can be accomplished in operating expenses.

History Says "Don't Risk It"

Q. Would not a reduction in rates expedite the return of traffic flow in general business and ultimately give the roads the income?

A. That is what the Interstate Commerce Commission thought in the first large-scale rate-advance cases.

In 1910 the Eastern and the Western roads sought advances. These were denied as the Commission believed increase in traffic would afford larger income. The actual result suggests the man who admitted he had a loss on every unit of business he did but said, "Where I make is by doing so much of it." Gross hit a high peak in 1913 at \$3,125,135,798 as compared with the \$2,750,667,435 in 1910, an increase of \$374,468,363. Contrast this with net railway operating income. This in 1910 was \$824,241,201 and in 1913 it was \$829,863,248—a gain of less than \$5,000,000, although the investment in road and equipment had meantime risen by \$1,931,242,689 and the interest on funded debt by \$35,170,704. The great gross tonnage in that heavy year 1913 was a great opportunity to lay something by for a rainy day. It was worse than lost, because the rates had not been raised. The owners of the roads actually had in 1913 many millions fewer dollars available for dividends, improvements out of earnings or surplus against lean years than they had in 1910 with \$374,468,363 more gross

earnings. Traffic later fell off and the roads had neither volume nor rates. The Commission then accepted the verdict of the facts and granted increases.

The average net income in the three years 1915-17 was only 5.2 per cent. Mr. McAdoo raised rates during government control. Volume of traffic was not affected by this one way or the other, because war needs forced on the roads every ton, every passenger they could carry. The people are being taxed now to pay the amount by which peak of load plus, not on reduced rates but on greatly increased rates, fell short of the guaranty—itsself an average of three previous years one of which was lean.

September and October, 1920, were record months in gross, exceeding any war month. The facilities were strained to the utmost, shippers co-operating with full loading and prompt car handling. The new rates had gone into effect August 29, yet failed by \$33,000,000 to yield 6 per cent in September and by \$20,000,000 in October.

Doing 110 Per Cent Capacity

Q. Is it true that in any business the highest profit is made on the last 10 per cent, in railroading perhaps the last 5 per cent of volume transacted and do not the railways make the largest income per unit of work done when running full capacity?

A. In any business when the plant is in poor repair, so that heavy use swells maintenance, or when the plant has to be enlarged to take all the business that is offered so that overhead has to be paid on new capital, expenses rise faster than gross and up goes income. Our railways, or many of them, are constantly but a few jumps ahead of dilapidation on the one hand and of saturation on the other. While they are doing the last 10 per cent of present capacity they are meeting increased labor cost inevitable during congestions and pouring money into repairs, yet driving rescuable facilities to an untimely scrap heap, or they are doing 110 per cent or more of present capacity by enlarging the plant; and if they enlarge on any considerable scale they enlarge for the future and are thus once more in the position of any business which is developing its gross up toward that theoretically most profitable 10 per cent.

Road's Own Tonnage

Q. Is there no tonnage they could better be handling than to sidetrack cars and store engines?

A. Yes. Their own. A general merchandise depression should be the signal for vigorous use by the roads of their tracks and rolling stock in the conveyance of material for the manufacture and reconstruction of their own facilities. The Railway Business Association has a Committee on Stability of Railway Purchases, which urges precisely this program, emphasizing that at no other kind of period can building and rebuilding of railroads be done so economically, with so little inconvenience to general traffic and yet with so beneficial an effect upon employment of labor in industry and trade.

Q. Why do not the railroads come into the market?

A. Some of them have come in and are getting bargains. Most of them have not the money and cannot get it. The 5.2 per cent which they realized from 1915 to March, 1920, was not enough as now officially certified. The 5.2 per cent promised them for the six months ended September 1 last, they have not received. The income since September 1 has averaged what would represent an annual rate between 3 per cent and 4 per cent.

Other Factors Brought Depression

Q. Were not freight rates an important factor in bringing on the present depression?

A. Probably they had almost nothing to do with it. The commodities most often mentioned—building materials—were not moving and would not have moved on any conceivable freight rate because capital had been driven from building by causes which are well known. The large factor in the present depression is that consumers stopped buying. The beginning of that strike was weeks before the August rates went into effect. The rate increases applied previously to August, except in a few cases were an insignificant part of the rise in commodity prices. Prices generally, regardless of freight rates, dropped as soon as buying fell off; and the August rate increase came without in the least retarding the price decline.

Economies Essential

Q. Ought not railway wages to come down?

A. The Railway Business Association does not discuss labor controversies. We can, however, see no wage reduction in such immediate prospect that it can be counted upon to offset rate reductions in 1921.

Q. Will not other economies provide net income?

A. It is to be hoped they will. President Willard, chairman of a committee for the railway executives to lay conditions before the Interstate Commerce Commission when the present rate level

was being adopted, said that the roads did not rely upon these advances for the whole increase in net income, but would do their utmost to supplement the revenue by economies. The object in applying for abolition of the so-called national agreements affecting labor cost was economy.

Major Economies

Q. Do not the railways obstinately neglect to introduce methods which would save millions a year?

A. That is what Louis D. Brandeis said in 1910. He declared that the railways as a whole could save a million dollars a day from shop economies through installation of "scientific management." Later a railroad bulletin announced that through economies sums much larger than that had been actually realized and Mr. Brandeis issued at Boston a statement claiming that his admonition had been heeded and his prediction fulfilled. Inspection of the bulletin itself disclosed that the economies referred to had preceded the admonition and the prediction. The comparison was for a period of years ending before Mr. Brandeis ever took part in a rate case. The economies were preponderantly not shop economies but economies from major capital investments such as those in straightening of curves, elimination of grades, multiplication of tracks, installation of signalling, enlargement of vehicles, with rebuilding of road and bridges to carry heavier trains, and development of terminals. Of the future it has been said by the Committee on Adequate Facilities of the Railway Business Association:

"Heavy investment in additions and betterments, with corresponding adjustment of income through economies or rates or both is the only means of getting ultimately to a lower rate level or even avoiding in the future a chronic condition of indefinitely rising rates."

There is a great group of industries maintaining special facilities and expert staffs, engaged all the while in the quest for inventions or methods which will promote safety, efficiency and economy. This has been the situation for many decades. Under that system American railways have won esteem abroad as the most progressive in the world. The one obstruction at this date to the most vigorous prosecution of progressive experimentation and installation of demonstrated improvements is weakness of railway credit.

Public Wise if Kept Informed

Q. Will not the public resist wage reductions if not accompanied by rate reductions?

A. Experience suggests that this will depend upon the vividness with which the public continues to be reminded of its stake in adequate net railway income. The bracketing of rates with wages implies that there was some year in the past when wages and rates were both correct, so that both having been raised both should now come down. But wages had been rising steadily for many years before any increase in rates was granted. A point that looks large to some writers is that the railroads have exaggerated the perfection of their physical condition before the war. This is an issue of fact which will be determined by agreement between the individual road and the government or by the courts in suits to determine over- or under-maintenance during governmental control. For the present discussion it is enough to remark that the worse anybody can show the condition of the roads to have been before they were taken over, the more must fair observers be convinced that railway income, and hence maintenance, credit and improvements, had suffered in the years preceding.

Ravages Regulatory

Q. Has not the damage to the railroads in the war been exaggerated?

A. It is not the ravages of war which created the need for the present rate level. It is the ravages of the old regulatory act, under which the average net income for the three years 1915-17 was 5.2 per cent on the cost of road and equipment—a rate which Congress in 1920 authorized the Commission to raise to 6 per cent. It is true this increase of income was not made to cover the war period. Congress said the roads needed at least 5.5 per cent and might need 6 per cent. The Commission says 6 per cent. For the 22 months of governmental control the guaranty was only 5.2 per cent. On the other hand the government is under contract to make good any neglect to keep the properties up under governmental control. If this is done they can ultimately be put in relatively good repair and their problem will be the improvement and enlargement of facilities; the roads will begin, so to speak, where they left off when the President took them, with inadequate facilities but with the Commission endeavoring to give them an increase in their average income from the 5.2 per cent actual just before the war and guaranteed during the war to the 6 per cent of the new act, or to such rate after March 1 next as the Commission then may compute to be essential.

Investigation of the Railroad Situation Proposed

WASHINGTON, D. C.

SENATOR CUMMINS, chairman of the Senate committee on interstate commerce, has announced his intention of introducing in the Senate at the opening of the extra session of Congress a resolution for a general investigation by his committee, or a sub-committee, of the railroad situation under the Transportation Act, with particular reference to the operating expenses of the railroads since their return to private management a year ago. The proposed investigation is intended not only to bring out clearly the facts and the reasons for the enormous increase in railroad operating expenses during the past year, which were \$1,400,000,000 greater than in 1919, but also to consider how a more economical basis of operation may be made possible so as to carry out the declared purpose of the Transportation Act of assuring the railroads a fair return on their valuation, in view of the fact that there is almost unanimous agreement that any further advance in rates no longer presents a feasible solution of the problem. In other words the senator and others with whom he has conferred are anxious to bring out as speedily as possible what may be done to bring down the cost of transportation to a more normal and reasonable basis and believe that such an investigation should precede any attempt to further amend the Transportation Act.

Senator Cummins has in mind a thorough inquiry into the reasonableness of the expenditures, including a comparison of the costs under private and under government operation and going into the question as to whether there has been any reckless and extravagant management of the railroads since March 1, 1920, as has been charged in some quarters, and if so, as to who is responsible. His talks on the subject, however, do not indicate that he has any particular idea of making a "goat" of the railroad managers or that his proposed investigation is of the accusatory type of many Congressional investigations. They indicate rather that he is inspired by a desire to develop the real facts of the situation and the proper remedy before the new Congress gets into a frame of mind for desultory tinkering with the Transportation Act. One or two senators have already proposed to meet the situation by reducing the percentage which the law declares to be a fair return or by repealing the percentage rule of rate-making entirely, ignoring the fact that the present rates, with a low volume of traffic and a high level of expenses, are not producing anything like the expected return.

Senator Cummins has expressed the opinion that unless something is speedily done to improve the present condition the railroads are headed straight for government ownership, which he is not in favor of, but he is counting on a considerable improvement in general business conditions. He proposes to find out whether there is any truth in the charges that have been given much publicity that the railroads have been extravagant while under a government guaranty and while under a law which many people have been fooled into thinking guaranteed them a specific return under any conditions.

The senator is by no means aligned with the labor faction that has been making most of the charges. He understands full well that the railroad managers are in no way to blame for the \$400,000,000 increase in wages from May 1 to the end of the year, nor for the increased cost of coal, and that a large part of the increased operating cost is a direct inheritance from the Railroad Administration because an increase in wages and time and one-half for overtime awarded by Director General Hines in the latter part of 1919 naturally loomed up heavier in the accounts for the full year 1920 than for the few months they were in effect in 1919, and the National Agreements executed by Mr. Hines with the labor

organizations affiliated with the American Federation of Labor cost considerably more money during 1920 than they did in 1919. He doubtless appreciates also that the fact that the railroads had been promised a guaranty payable in the indefinite future, hardly gave them either the incentive or the means for extravagance in the six months from March 1 to September 1, 1920, any more than the fact that the present rates are supposed to net 6 per cent gives them any money to throw away at a time when traffic is so light and expenses are so heavy that most of them are earning no return at all. However, he is by no means convinced that all of the necessary reductions in operating expenses can be expected to be made in the payroll and he has some ideas of his own that railroad methods can be improved in many ways that will reduce costs. In fact, he used the expression "obsolete" in referring to some methods of operation as well as some managers. It is well known that he believes economies would result from a consolidation of the railroads into a small number of systems and he also believes that large savings could be effected by consolidating railroad purchases.

Senator Cummins has consulted several of the members of his committee regarding the proposed investigation and believes there will be sufficient support for his plan. He has also been conferring on the subject of the railroad situation with members of the Interstate Commerce Commission, railroad officers and others for the purpose of gathering facts and ideas. Senator Cummins has been in close touch with President Harding during his recent sojourn in Florida before the inauguration, and it is known that railroad matters were also brought to Mr. Harding's attention there by several prominent railway executives.

The uselessness of investigation by Congressional committees has become proverbial, and is frequently commented upon by members of Congress themselves, but many of the members of the Senate committee on interstate commerce have been almost so steadily engaged on a study of the railroad problem since the beginning of the Newlands investigation in the fall of 1916 that they are learning the language of the subject and many of them have gained a deep insight into the problem. More is to be expected, therefore, from this committee than, for example, from the three senatorial committees that during the past year or so have been investigating the coal industry and have produced nothing in the way of results except a large additional amount of publicity for the fact that the price of coal has been very high and that somebody must have been profiteering.

The hearings conducted by the Newlands committee in 1916 and 1917 constituted a very general investigation of the railroad problem, but because of the intervention of the war and the taking over of the railroads it failed to produce definite results or even a report. The protracted hearings before the Senate and House committees on the federal control bill amounted to almost another general investigation and the exhaustive study made by both committees leading up to the passage of the Transportation Act naturally covered a very wide range, while both committees have had hearings since on several phases of the subject.

The Interstate Commerce Commission, of course, is closely in touch with most phases of the railroad situation at the present time except possibly the details of the labor situation that comes within the province of the Railroad Labor Board, and, aside from its general familiarity, it has been and is making, under the provisions of the Transportation Act, a close analysis of the operating expenses during the six months following the termination of federal control for the purpose of ascertaining the amounts which may be charged for maintenance and of certifying the amount of the guaranty. What the commission has to say, therefore, will undoubtedly constitute an important part of the evidence to be taken by the committee.

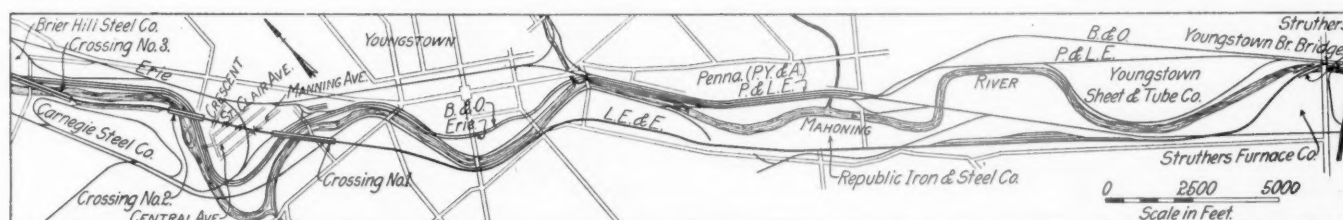
P. & L. E. Conducts an Extended Paint Test

Coatings Supplied by Eleven Manufacturers Subjected to Severe Service for a Period of Six Years

THE PITTSBURGH & LAKE ERIE recently completed an interesting experiment in the painting of steel bridges which had been undertaken to test the relative merits of several brands of paint for given conditions of exposure and to determine the effect of dispensing with the shop painting of structural steel. Conjecture on this latter point was founded on two premises, namely, the difficulty frequently encountered in securing proper workmanship in shop painting, and also in the fact that steel is covered with a mill scale which has a tendency to loosen after a period of expo-

town Branch bridge which was built about the same time as the other structures.

The paint used was supplied by eleven paint manufacturers, each of whom was permitted to select the paint most suitable for the conditions of exposure described by the railway officers. The manufacturers were also invited to specify methods of application which in their opinion would accomplish the best results, but after being afforded an opportunity to examine the railway company's specifications for paint workmanship, they all expressed their willingness to have



The Bridges Are Located in a District Where They Are Subjected to a Variety of Exposures

sure. It was felt that if this scale was afforded an opportunity to flake off before any painting was done, the paint coatings subsequently applied might prove more permanent, particularly as this practice is followed to a considerable extent in England.

An opportunity to work out these ideas in a comprehensive way was afforded about 1913 on the occasion of the building of the Lake Erie & Eastern, a subsidiary of the Pittsburgh &

their paints applied according to the methods adopted by the railroad.

The bridges were fabricated and erected during 1913 and 1914 under specifications eliminating all shop painting except on surfaces concealed in shop assembly and erection and for necessary marking. Exceptions to this occurred in three cases which were all given shop coats according to usual practice. The exigencies of the construction schedule were



1. Badly Deteriorated Coating. 2. An Example of Paint Coat Subjected to Abuse by Pounding and Scratching. 3. Typical Pitted Surface After Brushing and Scraping

Lake Erie serving as a terminal utility in the Youngstown, Ohio, industrial district. Within a distance of two miles near the north end of this line there is practically a mile of railway bridge structures involving seven independent bridges of various designs and conditions of exposure. These include three crossings of the Mahoning river, several railway undercrossings, two overhead highway bridges, one overhead foot bridge and two street subways or undercrossings. These bridges involved both ballasted floor girders of "through" and "deck" types and open floor truss spans of considerable length. In addition to this group of structures, the painting tests also included an open-floor through-girder bridge of the Pittsburgh & Lake Erie at Struthers, known as the Youngs-

such that the bridges were field painted from four months to fourteen months after erection, the erection having been done in from two weeks to seven months after fabrication of the steel. Thus, the steel surfaces were allowed to stand exposed to the elements for a variable time before the two field coats of paint were applied.

The condition of the spans at the time that the field painting was done varied widely. Some were badly rusted and scaled, while on others considerable areas of the mill scale were still intact.

In general, from 80 per cent to 95 per cent of the mill scale was well rusted and was easily removed by scrapers, wire brushes, etc., in the usual manner for cleaning surfaces. The

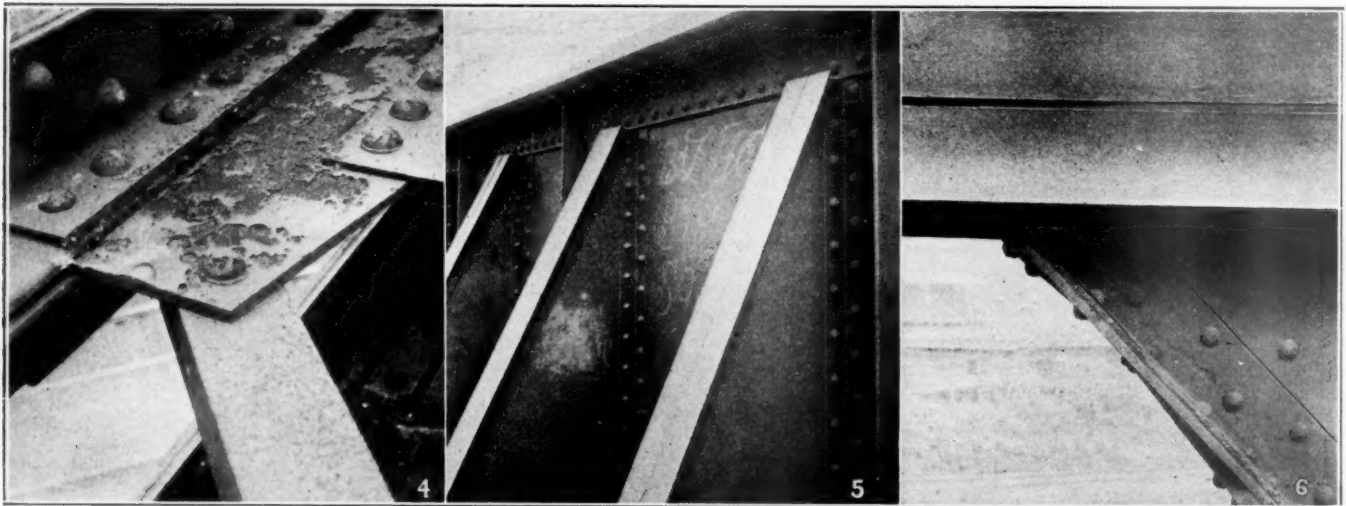
remainder of the mill scale was removed by chipping with hammers; sand blasting was not used.

The painting conformed to the usual methods. It was the intention to give the bridges a third field coat in lieu of the missing shop coat after a sufficient interval to disclose any defects in the earlier coatings which were to be corrected and spot-painted before the third field coat was applied. Unfortunately, the vicissitudes of the war period prevented the execution of this feature of the plan.

Any study of this test must be founded on the thorough understanding of one important fact, namely, that the exposure to which these bridges are subjected is unusually severe. In the first place the atmospheric conditions in Youngstown correspond with those to be encountered in any important center of steel manufacture. Moreover, all or portions of many of the structures are subjected to local exposure of greater severity, foremost of which is the presence underneath, at a number of places, of railway tracks carrying heavy traffic. Another important item is the peculiar condition encountered at the crossings of the Mahoning river. The water in this stream is used repeatedly by the various industries in its passage through the Youngstown

tures which with two exceptions varied from 66 per cent to 89 per cent, the average being 79 per cent. The two exceptions were 37 per cent and 44 per cent, and the cause of this poor showing is not at all apparent. An idea of the wide variation in the conditions may be obtained from an examination of the photographs. In general all horizontal surfaces were in a worse condition than the vertical surfaces. The most common condition where rusting has taken place, is a general roughness of the surface, produced by the breaking of very small blisters, which in general are easily removed with a wire brush.

One or two of the highway overcrossings suffered from what may be termed "malicious mischief," scratching, cutting and hammering, presumably done by children in the neighborhood. In one case the paint was injured by the paste used to stick war posters on the webs of the girders where this paste was smeared on the surface beyond the edge of the paper. The influence of filth accumulation was also noted at the bottom of some of the girders. The painting was all done between July 1, 1914, and Jan. 16, 1915, in which time the thermometer registered as low as 4 degrees below zero. Painting was only done under favorable condi-



4. Severe Scaling of Horizontal Surface. 5. An Example of Well Preserved Paint. 6. Paint in a Generally Fair Condition Subjected to Slight Pitting, with Bad Peeling in Certain Places

district, with the result that it rises to a temperature of as much as 130 deg. F. which, with the manufacturing waste and sewage which it accumulates, gives the water a character entirely different from a normal stream of fresh water. One of the bridges crosses the river almost directly over the waste-way of a dam where the resultant spray is high in impurities.

A study of these structures after six years of service shows such a wide variety of conditions of the painted surfaces that it is difficult to draw more than general conclusions. The officers of the railroad, however, have been enabled to learn something of the relative merits of the paint coatings used. In one place in particular there was a rather marked difference in the results secured with two brands of paint under practically identical conditions.

As regards the other purpose of the test, to determine the advantage, if any, of omitting the shop coat, the conclusion is not so clear because of the wide variation in results. As stated previously, there was a wide variation in the condition of the steel at the time that the field coats were applied and there were also wide variations in exposure. The condition of the paint surfaces determined from a careful inspection and graded according to carefully weighted values for the various attributes of the paint, resulted in the establishment of conditions-per-cent for the coatings of the various struc-

tions, and the general results do not seem to have been influenced in any way by the time of year the paint was applied.

Owing to the widely different exposure conditions, it is very difficult to reach a thoroughly satisfactory conclusion. The cost of cleaning the surfaces in the field before applying the paint, was considerably greater than the cost of applying the shop coat, and the results obtained are apparently in favor of the shop coat, but it must be borne in mind that these structures have three coats as against two coats of the all-field-painted structures, and also that it was not the intention to expect the two coats to last for the six year period.

An important point to be considered in putting this idea into use is the greater burden of responsibility placed on the field painting forces in thorough cleaning before the painting is done. Structures allowed to stand without paint protection for a considerable period are obviously covered with considerable coatings of rust and scale and unless the surfaces are thoroughly cleaned, the result will probably not be as good as if a shop coat had been applied to the metal with its mill surface.

This study has been carried on by the engineering department of the Pittsburgh & Lake Erie. We are indebted to A. R. Raymer, chief engineer, for an opportunity to compile the information presented above.

Repair and Maintenance of Steel Freight Cars*

Necessity for Adequate Shop Facilities and Proper Organization Strongly Emphasized

By Samuel Lynn

Master Car Builder, Pittsburgh & Lake Erie

HEAVER MOTIVE POWER, with greatly increased train tonnage, has created a demand for cars of increased capacity. The limit of capacity apparently has not yet been reached, since one of the large car companies has, within the year, constructed cars of 120 tons capacity.

While no accurate figures are available, it is estimated that approximately 70 per cent of the two and one-half million freight cars in service in North America are either of all-steel, steel underframe or steel center construction. As this number of cars represents an investment of over three billions of dollars, the importance of keeping them in good repair and in service is self-evident.

Maintenance Badly Neglected

A casual inspection in almost any classification yard will reveal the fact that repairs to steel cars have been badly neglected during the past few years. Large numbers of cars may be seen with floor, hopper and side sheets badly corroded and in many cases rusted and worn entirely through. A close inspection will usually develop the fact that center sills are buckled either in front of, or between the body bolsters. This condition is due either to faulty construction, sills of insufficient area, abuse in service, or neglected maintenance. Conditions existing during the recent world war imposed many hardships upon the railroads generally, making it almost impossible for them to keep the maintenance of their freight equipment up to pre-war standards. Shortage of labor and materials, coupled with the pooling of equipment, had a tendency toward deferred maintenance, which resulted in merely patching up worn out cars and keeping them in service long after they would have been shopped for rebuilding under a normal maintenance program. The large percentage of home cars on foreign roads resulted in neglect, since proper material for repairs of foreign cars was not generally carried in stock. This resulted in makeshift repairs, most roads doing only enough work on foreign equipment so that it would haul one more load, in the hope that it would carry that one load off the line and never return. The results of this practice are now most evident when cars are being returned to the home roads in large numbers and in almost universal bad order.

The speaker believes that the exterior of steel cars should be kept well painted, as by this process at least one side of the steel is protected against corrosion; in addition to this, well painted equipment is a good advertisement for any road. It is obviously impracticable to attempt painting the interior of open top steel cars, since the commodities usually carried in such cars consist of coal, coke, iron ore, limestone, furnace slag and mill products, which in the process of loading and unloading so badly damage the paint that it would serve no purpose as a protective coating. The interior of steel equipment is where corrosion is the most evident and is probably due to moisture laden with acids from the products of the mines and mills, or to electrolysis caused by impurities existing in the steel itself.

I would like to here state a few things that in my opinion are necessary to maintain steel car equipment properly and economically.

First: Shops should be provided at points where heavy repair steel car work is to be performed. They should be well lighted and ventilated, and in the colder sections of the country should be properly heated. Overhead crane service is desirable, and by proper arrangement eliminates the necessity for material tracks between the working tracks. Small wall or jib cranes should be installed for handling yoke riveters, etc. The money expended for shops will repay the investment many times over in a few years. While I would not say that a steel car cannot be repaired outside under adverse weather conditions, I believe that the work can be carried on more successfully where shops are provided.

Second: Shops should be well equipped with suitable machinery, properly located so that repair parts may be made economically without any lost motion or backward movement. It is a question whether or not it pays to attempt the manufacture of all steel car parts in the average railroad shop. Some of the larger railroads buy most of their car repair parts already punched and pressed into the proper shape ready for application. However, it is necessary to have sufficient machinery to make odd parts or to extend the supply when exhausted, as it is almost impossible to keep sufficient parts on hand to meet all conditions.

Punches, shears, hydraulic presses, heating furnaces, and a good supply of efficient pneumatic tools are indispensable in the modern shop and will soon repay the initial cost of installation. Sufficient compressor capacity with facilities for supplying dry air at all times is necessary for the economical use of pneumatic tools. Proper facilities should also be provided to take care of the scrap parts that will accumulate, and the shop and surroundings should be kept clean at all times. While this may not seem important to some, nevertheless it has a certain moral effect on the workman, which should not be underestimated.

Third: Other facilities must be provided, such as storehouses, storage yards, air brake shops, paint shops, oil houses, etc., depending on the size of the shops. The storehouse or material supply house should be located as near the shops as possible and electric tractor service or other means installed for convenient and economical transportation of materials. Fuel supplies and stores should be under direct supervision of the foremen in charge, or if the shop organization does not permit this, the storekeeper and car foreman should be very close together and work in perfect harmony.

The Importance of Supervision

Fourth: Another and probably one of the most important factors in repairs to steel cars is the quality and quantity of supervision. Sufficient intelligent supervision must be furnished or the work will lag and both the quality and quantity of the output will suffer. The gang foreman who comes into daily personal contact with every man under him is the keystone of any organization. He forms the contact point between the management and the men and when the contact is broken, the current ceases to flow. These men should be selected from the ranks, if possible, and should be men who have developed ability and initiative in their work and they should also have ability to handle the workmen. While a thorough knowledge of how to perform the work is necessary, this is not the first requisite, as ability

*Abstract of a paper read before a meeting of the Canadian Railway Club, March 8, 1921.

to handle men and personality stand above this qualification. Foremen should be intelligent and fairly well educated in order that they may read the rules, blueprints and instructions and apply them intelligently, and also that they may be eligible for promotion to higher positions as vacancies occur. Wages paid foremen should be sufficiently attractive to create an incentive for the men to fit themselves for such positions.

The successful supervisor, in addition to his knowledge of the work, should show loyalty toward his employer, have the courage to enforce discipline, insist on and obtain a fair day's work from every man in the service, and be absolutely impartial in handling his men in order to obtain and hold their co-operation and respect. He should also have the vision and ability necessary to discover trouble makers and weed them out before the remainder of the organization becomes contaminated. No man should be placed in the position of foreman unless the appointing officer feels that the man selected is capable of developing the necessary initiative and ability to accept any position up to the top of the shop organization, as those men selected for the bottom round of the ladder should be capable of advancing step by step until they reach the top. Most higher supervisory officers have not the time to mingle with the workmen and they must depend on their foremen to provide the little touches of personality and co-operation that are the life of any organization.

Fifth: Another important feature is the personnel of the shops. Wages paid and working conditions should be such that they will attract capable young men to seek employment in railroad shops. Unless this is done, there is a tendency for skilled mechanics to seek more remunerative employment in industrial work. This is particularly true in the large industrial centers. The tendency prior to federal control in some sections of the country, due to shortage of mechanics and inability to induce young men to enter the service, has been to hire foreigners from central and southern Europe, men who have never had any mechanical training, and to try to make mechanics out of them. These men come to us wholly unacquainted with our language, our customs, and our laws, and must be assimilated into our organizations. While at first a rather costly proposition, with proper and tactful handling they usually learn rapidly, and have become the mainstay of some of our car shop organizations. It is important that those charged with the handling of these men, should by careful and tactful treatment instill in them the principle of loyalty to their employers; with proper encouragement and fair dealing on the part of their foreman the majority of these men readily become acquainted with our methods of work. The nationalization of foreigners has become important and it is very generally conceded that they are more easily reached in the shops than in their homes. However, any tendency toward radicalism should be carefully watched and immediate steps taken to circumvent it.

The only commodity a railroad has to sell is transportation. Anything that tends to increase the quantity or speed of transportation is a distinct addition to the wealth and resources of the country. Good, efficient motive power may be essential, but without freight cars the railroads would have little use for locomotives. Estimating that four per cent of all the cars in the country are shopped, every day of unnecessary delay in returning them to service represents a per diem loss to the railroads of approximately \$100,000. The importance of providing adequate shop facilities is self-evident.

Suggestions as to Repairs

In the actual work of repairs it is suggested that draft attachments and center construction be sufficiently strengthened so that the shocks incident to modern service will be absorbed and distributed throughout the car, without causing extensive damage to the superstructure. Center and draft

sills should have sufficient area and should be protected against buckling by the use of cover plates. A common cause of failure is due to bodies of hopper cars not being securely fastened to center sills. A few rivets are driven in inside hopper sheets to hold the body to the sills, and the heads corrode and wear off, allowing the rivets to pull through the sheets. This results in the whole strain being thrown on the body bolsters, which are usually of a wide single plate type, with the result that they are unable to stand up under the strain. The sills start moving back and forth under the car and it soon gets in such condition that permanent repairs become a rather expensive proposition. Sides and ends of steel equipment should be properly reinforced to prevent bulging out under load. Drop door equipment should be kept in proper working order to facilitate unloading. Care should be taken in repairing trucks to provide side bearing clearance and to see that brakes and all running gear are kept in good condition.

A well defined program of reinforcement should be outlined and put into practice on all roads. The cost of such additions and betterments is usually insignificant when the future life and productive service of the car is considered. Money appropriated for such features is a good, sound investment when judiciously used, and should pay large dividends. Many roads make the mistake of repairing their older equipment in kind as they do not have exacting conditions on their lines. Such equipment should either be reinforced or kept on their own lines and not offered in interchange, where there is a possibility of it getting out into the large industrial centers and in heavy tonnage trains, when it is almost an impossibility to keep it off the repair tracks.

This places an unnecessary burden of expense on both the owner and the handling line. As cars come into the shop for general repairs, a careful inspection should be made, and if the car has not deteriorated to the extent that it is felt advisable to scrap it, it should be repaired in accordance with a well defined reinforcement program, as outlined. Otherwise, if this is not done, after considerable money has been spent on the car, due to inherent weakness, it will again be back on the shop track.

In conclusion, if the railroads were provided with the facilities and a maintenance program similar to that suggested in the paper was adopted by all roads, and an honest effort was made to maintain the cars in accordance with that program, the steel cars in the country would give the owners a better return for the money invested in the way of better service and in increased life of the cars.

Discussion

There were about 500 in attendance at the meeting; the discussion lasted two hours and had to be cut off because of the lateness of the hour. It was opened by Vice-President Grant Hall of the Canadian Pacific and Vice President W. D. Robb of the Grand Trunk. A large number of visitors were present from the "States."

In general the discussion indicated that there were few roads owning steel cars which had adequate shops or facilities for taking care of them. The problem has been greatly complicated in the United States by the return of badly deteriorated cars to the home roads at the end of federal control. One road converted an old roundhouse and an old storehouse into steel car repair shops by equipping each of them with facilities and tools costing about \$70,000. Five heavy repairs per day are now being turned out of each of these plants.

The metal used in steel cars was seriously criticised because of the rapid rate at which it deteriorates. It was suggested that a better steel be used, similar in composition to the iron used in the Baltimore & Ohio box cars which were built in 1862, the bodies of some of which are still in

existence and have not suffered to any extent from rust and corrosion.

Heavier motive power and careless switching of cars has been responsible in part at least for the failure of some of the earlier designs of steel freight cars.

What is needed more than anything else is a systematic program for making heavy repairs to freight cars so that a certain percentage of the equipment will be given such repairs each year—this percentage to be based upon the number of years which a car can safely run between heavy repairs. Locomotives are shopped on a mileage basis. Why not establish a reasonable and scientific basis upon which to shop freight cars and then see that it is lived up to? This will keep the equipment in prime condition and at a minimum of expense after the program has been well established. It will be necessary to speed it up for some time, however, in order to catch up with the deferred maintenance.

Partial Payments Being Made on Railroad Guaranty

WASHINGTON, D. C.

THE FIRST certificates issued by the Interstate Commerce Commission for partial payments to the railroads for their guaranty for the six months from March 1 to August 31, 1920, under the provisions of the Winslow law, were paid by the Treasury Department on March 3 and were followed shortly by the issuance and payment of additional certificates. The first of the partial payment certificates were for \$6,000,000 for the Great Northern and for \$637,190 for the Chicago, Milwaukee & St. Paul. On March 5 the Treasury announced the payment of \$7,000,000 to the Northern Pacific and on March 7, \$7,000,000 to the Chicago, Burlington & Quincy. The Chicago, Milwaukee & St. Paul had previously received \$14,297,702 in six advances on applications filed before September 1. The Great Northern had received \$5,000,000 in two payments, and the Northern Pacific had received \$5,000,000. The Burlington had not received any advance.

The commission has also announced the issuance of certificates to the Illinois Central for \$2,376,000, the Chicago & Alton for \$800,000, the Minneapolis & St. Paul for \$400,000 and the Tennessee Central for \$115,000. The Illinois Central had received two advances amounting to \$8,000,000, the Chicago & Alton had received \$700,000, and the Minneapolis & St. Louis had received five advances amounting to \$1,750,000. The certificate for the Alton was paid on March 8 and that for the Illinois Central on March 9.

The commission's certificate form states that it is not at this time able finally to determine the whole amount due under Section 209 but it has definitely ascertained and hereby certifies to the Secretary of the Treasury that the amount for which the certificate is issued, in addition to any sums heretofore certified in favor of the carrier, is due under Section 209.

The Treasury Department has recently announced the payment of loans from the revolving fund on certificates of the Interstate Commerce Commission as follows: Ann Arbor, \$400,000; New York, New Haven & Hartford, \$700,000; Louisville & Jeffersonville Bridge & Railway Company, \$162,000; Virginia Southern, \$38,000, and the Seaboard Air Line, \$1,173,600. The total payments made under the transportation act to date are summarized in a Treasury Department statement as follows:

(a) Under Section 204, for reimbursement of deficits during Federal Control	\$841,813
(b) Under Section 209:	
(1) To carriers to which final payment of the guaranty has been made under paragraph (g) including previous advances made under paragraphs (h) and (i) ..	1,311,700
(2) For advances under paragraphs (h) and (i) to carriers as to which a certificate for final payment has not been received by the Treasury from the Interstate Commerce Commission	263,022,874

(c) Under Section 212, for partial payments in respect to the guaranty provided in Section 209	23,813,190
(d) Under Section 210, for loans from the revolving fund of \$300,000,000 therein provided	185,616,137
Total	\$474,605,714

Additional funds for meeting the payments to the railroads as well as other requirements of the Treasury will be provided by new issues of Treasury certificates of indebtedness amounting to \$400,000,000 announced by the new Secretary of the Treasury, A. W. Mellon, on March 9. In a letter to bankers regarding the new issue, Mr. Mellon said that payments under the recent legislation authorizing partial payments on account of the railroad guaranty may amount to as much as \$200,000,000 during the course of the next month.

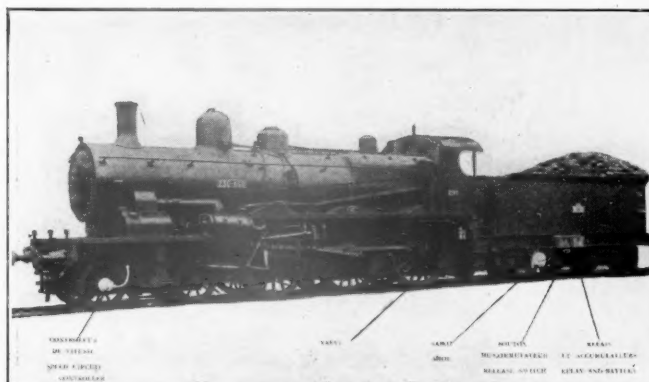
The United States Railroad Administration reports the following final settlements with railroads that were under federal control and has paid out to the several roads the following amounts:

Iowa Transfer Railway Company	\$7,200.00
Rapid City, Black Hills & Western Railroad Co.	4,000.00
Green Bay & Western Railroad Company; Annapee & Western Railway Company, and Kewaunee, Green Bay & Western Railroad Company	400,000.00
Southern Steamship Company	207,800.00
Waupaca Green Bay Railway Company	6,383.07
Escanaba & Lake Superior Railroad Company	140,000.00
New Orleans Great Northern Railroad Co.	190,000.00
Minneapolis Eastern Railway Co.	55,000.00
Louisiana & Arkansas Railway Co.	200,000.00
Chicago & Eastern Illinois Railroad	3,000,000.00
Lehigh & Hudson River Railway Co.	225,000.00
Charleston Terminal Company	90,000.00
Cumberland & Pennsylvania Railroad Co.	550,000.00
Gulf, Mobile & Northern Railroad Co.	100,000.00
Meridian & Memphis R.R. Co.	100,000.00

The payments of these claims on final settlement is largely made up of balance of compensation due, but includes all other disputed items as between the railroad companies and the administration during the 26 months of federal control. The settlements were in most cases on the basis of lump sum settlements in which it is impossible to distinguish the separate items of the claims.

Regan Automatic Train Control Exhibited in France

THE REGAN TRAIN CONTROL system which is in operation on the Chicago, Rock Island & Pacific, and which was described in the *Railway Age* April 30, 1920, page 1293, was exhibited on January 28, 1921, on the State Railway of France before a representative gathering of public and railway officers. A special train consisting of a standard



Regan Control Apparatus on French Locomotive

passenger engine and ten cars—including a dynamometer car—was used. The section of line selected for the test is on the Paris-Dieppe line between Liancourt St. Pierre and Chaumont en Vexin. The grade is descending, one per cent. Special distant and home signals were erected and track circuits

were installed in accordance with R.S.A. standards, the train control circuits on the roadside being connected through the several track relays and signals.

The following tests were made:

1. *Ordinary Working*
Position of Signals: Distant at caution; home at proceed.
Result of Test with the apparatus in operation: The speed of the train was automatically reduced to 18.5 m.p.h., at which the controller was set throughout the distant signal section, and on passing the home signal in the proceed position, the train was automatically restored to unrestricted speed.
2. *Non-Observance of Signals*
Position of Signals: Distant at caution; home at stop.
Result of Test: The speed was automatically reduced, as before, to 18.5 m.p.h. between the distant and the home signals, and the train was automatically stopped at the home signal location.
3. *Engine on Main Line Between Distant and Home Signals*
Position of Signals: Distant and home signals at proceed position.
Result of Test: Notwithstanding that the signals were in proceed position and that the train approached the distant signal at full speed, an automatic application of the brakes at the distant signal brought the train to a stop immediately after passing the distant signal location.
4. *Engine on Main Line Just Beyond Home Signal*
Position of Signals: Distant at caution; home signal at proceed position.
Result of Test: Automatic speed reduction to 18.5 m.p.h. at the distant signal; automatic stop application, stopping the train at the home signal.

The apparatus is so designed as to repeat three conditions of the track and signals on the engine: (a) Unlimited speed. (b) Limited speed, and (c) Stop. It provides three indications, though the visual signals in France (as well as in England) are two-position. In the Regan system the train, at each signaling point, has its speed regulated properly for the approach to the signal next ahead, and the speed is reduced automatically, before passing any signal, whenever the signal next ahead indicates stop.

Single Pedestal Swivel Type Car Seat

A CAR SEAT INVOLVING several important changes from the usual type of construction has been invented and patented recently by Frank Smolar, Dayton, Ohio, and will be placed on the market by the Dayton Car Seat &



Fig. 1. Normal and Inclined Positions of Smolar Car Seat

Manufacturing Company of the same city. One of the principal objects of the new invention is to provide a car seat with a back not normally inclined. The occupant inclines the back at will against springs in the arm rests to whatever

position may be most comfortable and the springs return the back to its normal upright position when the seat is vacated. The inclined position of the back is shown by dotted lines in Fig. 1.

The new car seat is light in weight, easy to install, and is not connected to the wainscoting. The latter feature eliminates drilling and tapping the wainscoting and using the window sill as an arm rest. The seat may be easily and quickly assembled and dismembered for cleaning purposes without the use of tools. A greater height than usual is available for steam pipes and there is ample room for suit cases and traveling bags under the seat bottom. A special effort has been made to secure simplicity of construction

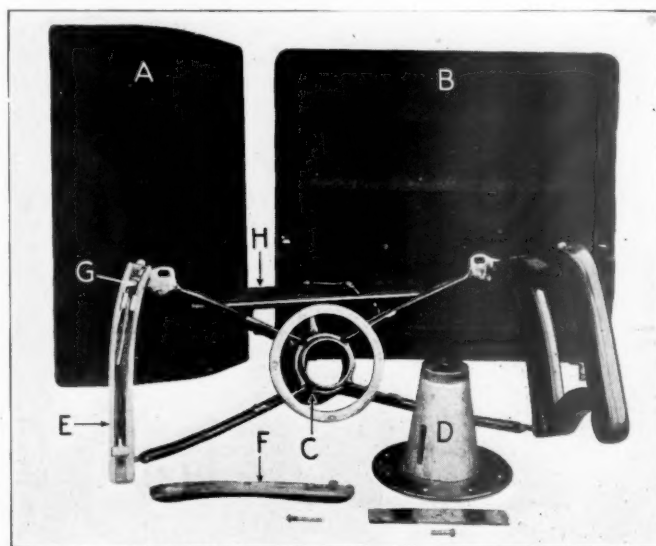


Fig. 2. View of Car Seat Parts Disassembled

without complicated parts to break or get out of order; also a minimum weight consistent with strength and rigidity. The seat may be automatically locked when in either extreme position and is stated to reverse easily, no lubrication being required. The swiveling feature makes it necessary to provide only one foot rest.

A view of the Smolar car seat, disassembled is shown in Fig. 2: A and B are the seat and back cushions respectively. The main seat support consists of a steel casting or pressed steel framework supported upon and guided by the frusto-conical pedestal D. Each arm rest E is divided horizontally, the lower section having a deep longitudinal recess, containing the anchor piece, spring, slide piece G and guide. Tension of both arm rest springs through the connections shown holds the back cushion in its normal upright position. The top section F is provided to cover the recess and parts enclosed in the arm rest.

The foot rest H is secured by means of two hinges to the main seat frame. A dog is provided which engages the slot in the pedestal and holds the seat firmly in either of its extreme positions. A small spring holds the dog in engagement with the slot and foot pressure on a small pedal casting fastened to the foot rest releases the dog and allows the seat to be swiveled.

Owing to the fact that the back does not need to be pulled over, cushions for the new car seat can be made to practically any desired height, width or shape to provide the greatest comfort for the passengers.

GOVERNOR CHARLES R. MABEY, of Utah, has vetoed a legislative joint memorial to Congress to amend the Transportation Act so as to give the state control of railroads in the making of intrastate rates.

General News Department

The New York Railroad Club will hold its regular monthly meeting on Friday, March 18, at the Engineering Societies' Building in West 39th Street. F. M. Brinkerhoff will present a paper entitled "Safety of Passengers in Steel Cars."

The Chicago & Alton has opened a new inbound and outbound local freight house on West Harrison street and the Chicago river, Chicago. This house is a two-level structure of fireproof construction, with a track capacity for 125 cars at the house, and a team track yard accommodating 150 cars.

John F. Wallace, chairman of the Chicago Railway Terminal Commission, has resigned on account of the pressure of personal business, this resignation to take effect as soon as the commission is reorganized by the City Council. Mr. Wallace will continue to co-operate with the commission in its future work.

The employees of the Gainesville Midland, a road operating 74 miles of line, with headquarters at Gainesville, Ga., have had their wages reduced about 33 per cent by an order issued on March 3 by Judge Evans of the United States District Court, to the receivers, who are in charge of the road. The receivers, G. C. Carson, vice-president of the road, and W. B. Veazey, general manager, took charge on February 15. It is proposed to reduce the total of the payrolls from \$180,913 to \$116,950.

The general managers of the New York Central, at a meeting in New York City on March 8, conferred with representatives of the unskilled laborers on the proposal of the company to make important reductions of pay on April 1. The workmen took the proposal under consideration and another conference is to be held on March 22. It is proposed to reduce the pay of workmen on the freight piers in New York City from 57 cents an hour to 45 cents; and trackmen at "principal points" will be paid 40 cents an hour, with lower rates at "intermediate" points. For some classes of men it is proposed to reduce the rates to those in effect prior to the issuance of decision No. 2 of the United States Railroad Labor Board.

The "Hummer," Chicago & Alton, eastbound train No. 10, Kansas City to Chicago, was stopped by two robbers on February 25 near Quincy Junction, Ill., and three registered letters and a package were carried off. The train had just crossed the Mississippi river when the bandits, who had boarded the train at Louisiana, Mo., climbed over the tender and ordered the engineman to stop the train. One of the engine crew was then ordered to cut the train behind the combination baggage and mail car and the engineman was forced to run the engine and car a mile up the track. In the meantime the car had been entered, the loot gathered and the robbers then made their escape. An attempt to hold up this train earlier in the month failed when the engineman drifted past the point where he was ordered to stop by a lone highwayman.

Executives and counsel of the Great Northern and Northern Pacific, accompanied by some New York bankers, conferred informally with the members of the Interstate Commerce Commission on Wednesday regarding a new plan for meeting the maturity on July 1 of the \$215,000,000 joint 4 per cent bonds, secured by the 97 per cent of the stock of the Chicago, Burlington & Quincy owned by the two roads, in view of the fact that the Interstate Commerce Commission has spoiled the plan which had been proposed for paying off about \$80,000,000 of the bonds with the proceeds of the \$80,000,000 Burlington bond dividend which the commission declined to authorize. The majority report of the commission suggested that the joint bonds be refunded by new bonds secured in part by mortgages on the two roads and in part by Burlington stock as collateral.

Atlantic City Exhibit Abandoned

At a meeting of the executive committee of the Railway Supply Manufacturers' Association at Pittsburgh on March 10, it was decided not to exhibit at the annual convention of Division 5 (Mechanical) of the American Railway Association, scheduled to be held at Atlantic City June 15-22 next.

The Classification of Bridges

C. F. Loweth, chief engineer of the Chicago, Milwaukee & St. Paul, will present a paper on the "Classification and Maintenance of Old Railroad Bridges" before the Western Society of Engineers, Chicago, on Thursday evening, March 17.

Change in Time Zone Boundary

A bill to transfer the Panhandle and Plains section of Texas and Oklahoma to the Central Time zone was passed by both houses of Congress in the last hours of the session on March 4 and the Interstate Commerce Commission on Monday last issued an order readjusting the western boundary line of the Central Time zone in accordance with the law.

Pennsylvania Orders Reduction in Service

The Pennsylvania Railroad, to further reduce expenses, announced on Tuesday the withdrawal of one passenger train between Philadelphia and Washington and one between Baltimore and Washington; also the combining of two through trains into one from Philadelphia westward in the morning and another similar combination in the evening. Since the beginning of the retrenchment policy, in December, the Pennsylvania has reduced its total force from 279,000 persons to 218,000.

Chief Interchange Inspectors and Foremen Meet

A meeting of the Chief Interchange Car Inspectors' and Car Foremen's Association of America was held at the Hotel Sherman, Chicago, on March 3 and 4, for the purpose of discussing and recommending proposed changes in the M. C. B. Interchange rules. The meeting was attended by about 100 members of the association and recommendations were adopted proposing a number of changes in the rules, which will be placed before the appropriate committees of the mechanical division of the American Railway Association.

Annual Railroad Conference of the A. A. E.

The third annual railroad conference of the American Association of Engineers will be held at the Congress Hotel, Chicago, on Monday, March 14. The main object of this meeting is to develop co-operation between employers, employees and the public. Among the papers to be presented are: The Effect of the Railway Labor Board's Decision on the Salaries of Railroad Professional Engineers, by T. D. Trueblood, assistant engineer, Chicago & North Western; Educational Co-operation with the Management, by Prof. Lewis Gustafson; An Educational Plan Now in Effect, by W. L. Lewis; and Railroad Occupational Classification.

Employee Educational Work on the Great Northern

To meet a desire expressed by a number of employees, particularly in the engineering department, for an opportunity to acquire a broader knowledge of railroading than comes to them through the routine work of their own departments, the Great Northern is developing a course of study to be taken up at bi-monthly meetings, in St. Paul, of a class of several hundred

employees. The course is designed to cover a period of about six months and the class is open to employees of all departments who are interested.

The extent of the interest is indicated by the fact that over 400 employees responded to the call for the first meeting. Interest in the plan is also developing among employees at outlying points and consideration is being given to means of extending it. This work had its inception among employees and officers at the headquarters of the road at St. Paul. Consideration is also being given to the development of a course of study that will meet the special requirements of interested employees in the mechanical department.

Large Coal Cars

The Pennsylvania Railroad System now has in service 37,437 open-top cars of 70 tons capacity; and the average capacity of all its open-top cars is almost 55 tons—109,958 pounds. This, together with other interesting information, is shown in Quarterly Supplement No. 1, to the Railway Equipment Register. The company has also 168 such cars of 75 tons capacity and one each of three larger capacities. The Norfolk & Western has 1,110 of 100 tons capacity and the average of all its open-top cars is 110,289 pounds. Some totals for these roads and for the Virginian, are shown in the following table:

OPEN TOP CARS—AVERAGE CAPACITIES			
1	2	3	4
Road	Cars holding 50 tons or more	Total open top cars	Average capacity all open top cars, lb.
Norfolk & Western.....	34,299	37,856	110,289
Pennsylvania	170,260	174,279	109,988
Virginian	7,294	7,477	105,679

All of these roads have, of course, some smaller cars, the number of which is indicated by the difference between the number in column 2 and that in column 3. Of the 21 roads shown in the list referred to, the following nine report the average capacity of their open-top cars as 45 tons or more; Central of New Jersey; Chicago & Northwestern; Chicago, Burlington & Quincy; Erie; Illinois Central; Missouri, Kansas & Texas; New York Central; Southern Pacific (in Texas and Louisiana); Southern.

Information of this kind concerning other roads is in preparation for future issues of the Supplement. The lists include box cars and other revenue cars also, and altogether they include a total equal to about 30 per cent of the total freight car equipment of North America. The roads in the present lists which report the average capacity of their box cars at 45 tons or more are the Pennsylvania (84,873 cars), 94,952 lb., and the Southern Pacific (in Texas and Louisiana), (9,124 cars), 93,860 lb.

This Supplement, containing the various compilations heretofore appearing in the regular monthly issues of the Railway Equipment Register, and also the complete list of names of all the railroads and private car companies in the country, with names of officers in charge of car maintenance, car records, etc., is issued in February, May, August and November at two dollars a year.

Western Union Wires on L. & N.

The litigation concerning the rights of the Western Union Telegraph Company on the lines of the Louisville & Nashville railroad seems destined to go on forever. A new complication was introduced on February 16, when Judge William Rogers Clay, Court of Appeals, at Louisville, granted an injunction to the telegraph company to prevent the railroad from removing poles from the railway right-of-way.

The injunction was issued on the ground that the telegraph company is entitled to a full opportunity to have the merits of its case decided by the Supreme Court.

This case has been going the rounds of the Federal and State courts for more than eight years. It probably will be more than a year before the Supreme Court renders a final decision.

The case was taken before the Court of Appeals after Judge Samuel B. Kirby had denied the telegraph company an injunction. Previously, Judge Walter Evans, in the Federal District Court, granted an injunction, but the Circuit Court of Appeals dismissed it. Then Judge Evans fixed nine months as the time the telegraph company should have to remove its poles. Attorneys for the telegraph company contended that this time might expire before the Supreme Court gave its decision.

The basic point before the Supreme Court is whether the Western Union lost its condemnation rights in an act passed by the Legislature in 1916. Prior to that time it had sued to condemn portions of the railway right-of-way for its poles. A jury fixed the sum to be paid for this privilege at \$500,000. Judge Evans set this verdict aside as excessive and fixed the sum in a second trial at \$5,000.

Matters were complicated further when the Legislature passed an act repealing the statute on which the Western Union was basing its contentions. The railroad then moved that the case be dismissed on the ground that the telegraph company had lost its condemnation rights.

Judge Evans held that repeal of the law applied only to the future and not to rights acquired previously. This decision was reversed by the Circuit Court of Appeals and the injunction dissolved. The question of condemnation rights then was taken before the Supreme Court.

Four Vacancies on Interstate Commerce Commission

President Harding is expected to act with reasonable promptness in appointing members of the Interstate Commerce Commission to fill the four vacancies that now exist and it is understood he will also appoint a new director general of railroads to succeed John Barton Payne, who retired as Secretary of the Interior on March 4. There has been one vacancy on the Interstate Commerce Commission ever since the membership was enlarged because James Duncan, who was given a recess appointment, never accepted the position. There has also been a vacancy since December 31 when the term of Robert W. Woolley expired, and Commissioners Potter and Ford were serving under recess appointments which expired on March 4, because their appointments had not been confirmed by the Senate. There have been rumors that Commissioners Potter and Ford will be reappointed and it has been the general understanding that John J. Esch, who has been chairman of the House committee on interstate and foreign commerce, would be appointed.

Michigan Central Train Crew Held Responsible for Porter Collision

At the conclusion of the inquest following the Porter, Ind., train disaster, held at Valparaiso, Ind., on March 4, the Michigan Central engine crew who were charged with responsibility for the wreck were arrested but were immediately released on bail furnished by the Brotherhood of Locomotive Engineers and Firemen. Both men attended the inquest but neither testified. After the finding of the coroner's jury the two issued a statement in which they set forth that the interlocking home signal governing the route over the derail 311 feet from the crossing where the New York Central train plunged through the Michigan Central train, gave them a clear right-of-way, although the distant block showed a yellow light. This last signal they claimed to have complied with by bringing their train under control. Witnesses at the inquest claimed that the home signal had been set against the train, these witnesses including the engineman and fireman of a freight train which was standing on a siding to allow the passenger trains to pass. Two brakemen of this same train testified that they had tried to flag the Michigan Central train with the white lanterns at hand, and it was their belief that the strong headlight of the train had made these invisible. The engineman of the freight train, in testifying, said that smoke from his engine might have interfered with the engineman of the Michigan Central train having a clear vision of the home signal. It was brought out at the inquest that the Michigan Central train normally had the right of way at the crossing but on the night of the wreck it was eight minutes behind schedule.

Meanwhile the joint board of inquiry of the State Public Service Commission of the State of Indiana and Interstate Commerce Commission met at Gary, Ind., on March 8, to investigate the causes for the wreck and testimony was taken from the towerman and the crew of the freight train which was on the siding at the time of the disaster. E. J. Lewis presided, while others at the hearing were John W. McCardle, vice-chairman, Glenn Van Aiken, H. B. Lyon and J. S. Hawley, representing the Interstate Commerce Commission.

Traffic News

The consolidated ticket offices at Tacoma and Seattle, Wash., were discontinued March 1, each line establishing an office of its own in these cities.

"The Port of Astoria," Astoria, Oregon, has established a traffic and transportation department and has appointed as its manager, Roger D. Pinneo.

The Arkansas & Louisiana Missouri Railway announces that its road has been rehabilitated and that through trains are now being run from Monroe, La., north to Crossett, Ark., 52 miles. The company operates freight service between Bastrop, La., and Huttig, Ark., 31 miles.

Intrastate passenger fares in Michigan may be kept at three cents a mile, this being the decision of the Federal Court at Detroit on March 4 in the suit of the railroads for an injunction restraining the Public Utilities Commission of the state from enforcing a rate of 2.5 cents.

The six New England special committees appointed by the governors of the New England States on February 27 to consider the traffic crisis in that territory, met in Boston on March 8 and had a further conference with representatives of the railroads. An executive committee was named to formulate a plan of action.

Senator Phipps of Colorado has presented to the Senate a concurrent resolution of the general assembly of Colorado petitioning Congress to so amend the transportation act as to protect and preserve the powers of the several states with relation to intrastate rates, services and facilities and the local fares of the common carriers within the states.

The Texas City Transportation Company which formerly owned the Terminal Railroad and dock facilities at Texas City, Tex., has been reorganized and a new company has been recently incorporated under the name of the Texas City Terminal Railway Company. The new organization has taken over and will operate the facilities of the old company.

The Traffic Club of Oklahoma City, Okla., was organized on February 14 and the following officers were elected: President, H. C. Conley; first vice-president, H. H. Hunt; second vice-president, H. D. Driscoll; secretary, K. C. Baker; treasurer, D. D. Decker; directors, J. L. Carleton and M. C. Burton. A meeting is planned on March 7 at which time the object and purpose of the club will be explained to invited guests eligible for membership.

Passenger Traffic for November

The number of passengers carried by the railroads in November, 1920, after the increased rates had been in effect for three months, was still greater than for November, 1919, but the average journey was slightly less. The total was 96,632,000 passengers, an increase of 1.6 per cent, but the average journey was 36.38 miles as compared with 37.2. As a result the passenger-miles for the month showed a decrease of .6 per cent. Passenger revenues for November were \$106,829,660, an increase of 15 per cent over November, 1919. The average receipts per passenger mile were 3.62 cents as compared with 2.61 cents.

Last Year's Grain to Be Moved

Larger stocks of grain of last year's crops were held on the farms on March 1 this year than on that date in almost any other year in history, according to estimates announced by the Department of Agriculture. The wheat on the farms on March 1 amounted to 207,000,000 bushels as compared with 164,000,000 bushels a year ago. This quantity had been exceeded in March, 1916, when 244,000,000 bushels were held, but the stock on hand on March 1, this year, represented 26.4 per cent of the crop, whereas that of March, 1916, represented 23.8 per

cent. On March 1, 1920, the wheat on the farms was 17.6 per cent of the crop. Of the corn crop 1,572,000,000 bushels, or 48 per cent, were held on the farms on March 1, as compared with 1,070,000,000 last year. There were also 689,000,000 bushels of oats as compared with 418,000,000 last year and 69,000,000 bushels of barley as compared with 36,000,000 last year. In 1919 there were 81,000,000 bushels of barley.

Revised Regulations for Explosives

The bill recommended by the Interstate Commerce Commission to modify and strengthen the existing law regulating the transportation of explosives, including more specific penalties and bringing within the jurisdiction of the commission's regulations a number of recently developed explosives and other dangerous articles, was passed by Congress on March 3.

Anthracite Shipments—January, 1921

Shipments of anthracite in January, as reported to the Anthracite Bureau of Information, amounted to 5,740,538 gross tons, against 6,436,320 tons in December, 1920, a decrease of 695,782 tons. There were 25 working days, but three of these were observed as religious holidays in some parts of the region, and a strike in the Panther Creek valley helped reduce the total output. The month's total was nevertheless almost equal to that of November, 1920, 5,765,347 tons, and was slightly in excess of the record for the corresponding month of January, 1920, when 5,713,319 tons were shipped.

Shipments by originating carriers were:

	January, 1921	December, 1920
P. & R. Ry.....	1,172,873	1,324,004
L. V. R. R.....	1,058,127	1,161,305
C. R. R. of N. I.....	470,704	497,735
D. L. & W. R. R.....	910,260	940,515
D. & H. Co.....	814,491	896,475
Penna. R. R.....	451,879	457,242
Erie R. R.....	606,602	675,979
N. Y. O. & W. Ry.....	156,564	164,557
L. & N. E. R. R.....	99,038	318,508
Total	5,740,538	6,436,320

1920 Traffic and Car Performance Break Records

WASHINGTON, D. C.

The fact that the railroads in 1920 broke all previous records for the volume of freight service performed and that they also established new records for efficiency in freight car performance has been known for some time but the final figures for the year, just compiled by the Interstate Commerce Commission, show some interesting comparisons with the three previous years of the period of war and of federal control. New records were established for ton mileage, car and train load and net ton miles per car day.

The net ton miles of freight handled by the railroads during the year aggregated 445,975,000,000, exceeding the total for 1918, heretofore the record, by eight billions, or about two per cent. In 1919 the railroads handled 393,684,000,000 ton miles; in 1918, 437,000,000,000; in 1917, 430,000,000,000, and in 1916, 396,000,000,000.

The average load per loaded car for 1920 was 29.4 tons, which also breaks all previous records for a year. For 1919 the average car load was 28 tons, for 1918 it was 29.2 and for 1917 it was 27. The average mileage per car per day for 1920 was 24.9. This was greater than the average for 1919, which was 23.0, but was the same as the average for 1918 and less than that for 1917, which was 26.1.

The average train load in 1920 was 728 tons as compared with 718 in 1919, 681 in 1918 and 653 in 1917. The average ton miles per car per day was 497 as compared with 441 in 1919, 487 in 1918 and 495 in 1917. The average number of serviceable freight cars on line daily was 2,293,758 as compared with 2,287,769 in 1919; and the average percentage of unserviceable cars was 7 per cent, as compared with 7.1 per cent in 1919.

The average cost per freight train mile (selected accounts) was \$2.046, as compared with \$1.649 in 1919. The average cost per mile for locomotive repairs was 51.4 cents as compared with 43.2; enginemen, 23.9 as compared with 23.2; fuel, 63.8 as compared with 49.6; other locomotive and train supplies 12.7 as compared with 11.6; enginehouse expenses, 12.2 as compared with 10.5, and trainmen 34.7 as compared with 26.8.

Commission and Court News

Interstate Commerce Commission

By a second supplemental order the Interstate Commerce Commission has suspended until July 10, various schedules which propose to increase the existing charges of 50 cents per car for loading and unloading live stock at stock yards at East St. Louis, Ill., Sioux Falls, S. D., and various other points to \$1 per car and provide for the absorption of these increased charges by the carriers reaching such points.

The Interstate Commerce Commission has announced a supplemental hearing on March 24, at Topeka, Kan., before Examiner Disque, in the matter of rates, fares and charges in Kansas on the lines of the Arkansas Valley Interurban, the Union Traction Company, Kansas City, Kaw Valley & Western, Joplin & Pittsburg, and such other common carriers of freight or passengers operating by electric power in the state as shall appear.

The Commission has made public a tentative report of Examiner H. C. Keene, recommending the dismissal of a complaint filed by the Arizona, Nevada and New Mexico state commissions asking for a reduction in passenger fares between points in Arizona, Nevada and New Mexico and between points in those states and other states, on the ground that they have not been found to be unreasonable, unduly discriminatory or unduly prejudicial.

The Interstate Commerce Commission has announced a hearing on March 21, at Chicago, Ill., before Chief Examiner Quirk, in the matter of rates, fares and charges in Illinois, maintained or participated in by the Pullman, Chicago & Calumet River, Chicago Heights Terminal Transfer, Chicago River & Indiana, East St. Louis Connecting, Manufacturers Junction, Aurora, Elgin & Chicago, Chicago, Lake Shore & South Bend, Chicago, Ottawa & Peoria, Danville, Urbana & Champaign, Bloomington, Decatur & Champaign, Illinois Central Traction, St. Louis Electric Terminal, St. Louis, Springfield & Peoria, East St. Louis & Suburban, St. Louis & Belleville, St. Louis & Ohio River, and such other common carriers of freight or passengers operating by steam or electric power in the state as shall appear.

The Interstate Commerce Commission has issued its decision in the Louisiana intrastate rate case, in which it orders an increase in the passenger fares including the surcharge for Pullman passengers, but excepting commutation fares or fares for special occasions, corresponding to the increase allowed for interstate traffic. Similar increases were ordered in the rates for the transportation of milk in passenger trains, but the commission deferred for later consideration the issue with respect to rates on sugar cane for the reason that there is no discrimination as between intrastate shippers of sugar cane and interstate shippers of the same commodity. The question of sand and gravel rates was also reserved for later determination and the issue as to rates on rice and cotton was withdrawn.

State Commissions

A temporary injunction enjoining the Ohio Utilities Commission and the attorney general of the state from interfering with action of the railroads in Ohio in charging increased passenger rates was issued in the United States District Court at Columbus, on March 3. The injunction, which supersedes a temporary restraining order granted recently, is to stand until the case is decided on its merits. Appeal to the United States Supreme Court will be taken by the state, it was reported. Although Ohio, together with several other states, already has a case before the United States Supreme Court contesting application of the increased rates to intrastate traffic, appeal of the decision, it was pointed out, would bring the matter up as a separate action wherein the Ohio three-cents-a-mile law and other conditions peculiar to the state could be taken into consideration.

Court News

Statute Imposing Tax on Gross

Receipts of Freight Line Held Void

The Mississippi Supreme Court holds that the provision of section 112 of the State Constitution of 1890 that taxation shall be equal and uniform, and that property shall be assessed for taxes according to its true value, can be complied with only by taxing all property at the same rate on its true value, and the Legislature is without power to provide for the taxation of property by any other method. Consequently chapter 113, Mississippi Laws of 1912, which provides for a fixed charge on the gross receipts of a freight line company in lieu of all taxes on the property of the company used in its business, is void.—*Rock Island v. Robertson* (Mass.), 84 So. 449.

United States Supreme Court

Limitation of Liability Without Choice of Rates

On March 10, 1915, a consignor delivered to the Pacific Mail Steamship Company at Yokohama, Japan, 56 cases of "Drawn Goods and Renaissance," consigned to his own order at New York, and received a bill of lading for ocean transportation to San Francisco and thence by the Southern Pacific and its connections, by rail, to destination. The property was totally destroyed in a collision on the Union Pacific. A successor in interest claimed, in an action against the Union Pacific, the fair invoice value of the goods, \$17,449, and the railroad conceded his right to recover, but only to the amount of the agreed valuation of \$100 per package, \$5,600, to which it contended he was limited by the bill of lading. The New York Appellate Division rendered judgment for the plaintiff for \$5,600, with interest and costs. This was reversed by the New York Court of Appeals and judgment directed for the plaintiff for \$17,449, with interest and costs. The case was taken to the Supreme Court of the United States on certiorari, and that court has affirmed the judgment, against the carrier.

On the face of the bill of lading received at Yokohama was the notation: "Weight 26,404 lbs.; Ocean weight rate, 50 cents; Freight \$132; Rail, minimum carload weight, 30,000 lbs.; Weight rate, \$1.25; Freight, \$375." "On the back of the bill of lading a printed provision limited the value and the liability of the companies therefor in case of total loss to \$100 per package. In the schedules of the Union Pacific was a rule, Rule 9A, providing that when property is transported subject to the provisions of the Western Classification, the acceptance and use are required, of the Uniform Bill of Lading. For the purposes of the case only, it was admitted, and accepted by the Supreme Court, that this rule 9A permitted and required that the property should be treated as moving east of San Francisco under the Uniform Bill of Lading, although, in fact, no other than the Yokohama bill of lading was issued. The railroad contended that the agreed valuation of \$100 per package in the Yokohama bill of lading was necessarily imported into the Uniform Bill of Lading; it became the valuation "agreed upon" within the terms and conditions quoted from that bill, and limited the plaintiff's recovery to that amount, \$5,600, regardless of the value of the property and of the fact that it was lost by the carrier's negligence.

The Supreme Court holds that "this valuation rule, where choice is given to and accepted by a shipper, is, in effect, an exception to the common law rule of liability of common carriers, and the latter rule remains in full effect as to all cases not falling within the scope of such exception. Having but one applicable published rate east of San Francisco the petitioner [the Union Pacific] did not give, and could not lawfully have given, the shipper a choice of rates, and therefore the stipulation of value in the Yokohama bill of lading, even if treated as imported into the Uniform Bill of Lading, cannot bring the case within the valuation exception; and the carrier's liability must be determined by the rules of the common law. To allow the contention of the petitioner would permit carriers to contract for partial exemption from the results of their own negligence without giving to shippers any compensating privilege." *Union Pacific v. Burke*. Decided, February 28, 1915. Opinion by Justice Clarke.

Foreign Railway News

Serious Competition by Germany

LONDON.

The Russian Soviet government recently asked for bids for 1,000 locomotives to be delivered over a period of years. The price quoted by two German firms backed by Krupps was approximately \$52,000 rate of exchange as against the lowest British quotation of \$80,000.

German Locomotives for Spain

LONDON.

German firms have secured a large contract for locomotives for Spain. They have agreed that 90 per cent of the purchase price shall be paid when the locomotives are under steam on the Spanish railroads, the other 10 per cent to be paid six months after they have been proved satisfactory.

Westinghouse Brakes in France

According to a Paris cable to the New York Herald, the Westinghouse air brake is being tested by the French minister of public works, and will, according to present indications, be adopted as standard for the French railways. Several other brakes are being tested under the direction of the minister. Among them are the Kunz Knorr, the Lipowsky and several French, German and English models.

Railway Strike in Mexico

A general railway strike is in effect in Mexico, resulting, according to newspaper reports, from the failure of the administration to recognize what is described as a radical union of all classes of railway workers. It would appear that there is considerable violence in connection with the strike. Reports of bridges blown up, engines disabled and attempted destruction of railway buildings appear with frequency in the daily press. It is also reported that a number of strikers have been executed for deeds of violence.

Receipts and Expenditures on English Railways

LONDON.

The Ministry of Transport has issued a statement regarding the financial results of the working of the railways during the eight months ended November 30, 1920. The total revenue earned was approximately \$597,406,558 at the present rate of exchange. The total expenditure was \$564,848,273, giving a balance of revenue over expenditure of \$32,558,284. The standard year proportion of net receipts under the given guarantee was \$116,637,500, to which is added for interest on capital works brought into use, or \$2,761,500. Thus the net government liability for the eight months ending November 30, 1920, is \$89,255,659.

England's Exports of Railway Materials

LONDON.

The returns of the Board of Trade of Great Britain for December give the value of railway material exported during the year 1920 to be as follows as against the exports for the year 1919:

	1920	1919
Locomotives	\$23,949,576	\$7,124,936
Rails	10,792,760	8,036,736
Passenger cars	6,780,028	2,377,408
Freight cars	22,838,844	9,496,568
Wheels and axles	7,700,028	3,286,300
Tires and axles	5,668,812	3,603,820
Chairs and metal ties	5,263,208	1,270,816
Miscellaneous track materials	9,475,140	3,115,620
Total track materials	39,388,672	12,572,568

These figures are quoted at the present exchange rate. The weight of rails exported was 131,079 tons for the year 1920, as against 125,256 tons for the year 1919.

Equipment and Supplies

Locomotives

THE PEKING-HANKOW has ordered 30 Prairie type locomotives from the Baldwin Locomotive Works.

THE SEISEN-SHOKUSAN (Korea) has ordered 1, 0-6-0 type locomotive from the Baldwin Locomotive Works.

THE TEXAS-MEXICO, reported in the *Railway Age* of February 18, as inquiring for some 0-6-0 and 4-6-0 type locomotives, has ordered one of each of the above types from the Baldwin Locomotive Works.

Freight Cars

THE PEKIN-MUKDEN, reported in the *Railway Age* of January 21, as inquiring through the car builders for 300 or more 44-ton capacity gondola cars, is now inquiring for 200, 40-ton gondola and 200, 30-ton box cars.

Iron and Steel

THE MISSOURI PACIFIC has ordered 150 tons of plate girder spans from the American Bridge Company.

THE CHICAGO UNION STATION COMPANY has received bids for 6,000 tons of structural steel to be used in the construction of the new railway mail terminal, Chicago. The company has also received bids for 420 tons of structural steel to be used in building the Madison street viaduct, Chicago, and for 320 tons for use in widening Canal street, Chicago, between Van Buren and Jackson streets.

Track Specialties

THE MAINE CENTRAL is in the market for 1,000 tons of tie plates.

THE PITTSBURGH & LAKE ERIE is asking for from 1,400 to 1,500 kegs of standard spikes.

THE BANGOR & AROOSTOOK is inquiring for 500 tons of tie plates and for frog and switch material.

Signaling

THE LOUISVILLE & NASHVILLE has ordered from the General Railway Signal Company an electro-mechanical interlocking-machine for Biloxi, Miss.; four mechanical levers and four electric.



Photo by Underwood & Underwood

The New York, New Haven & Hartford Fighting the Snow on Cape Cod

Supply Trade News

Langley Ingraham has been appointed general sales manager of the railroad department of **The Lowe Brothers Company**, at Dayton, O., effective March 1.

J. F. Duesenberry, heretofore with the commission on car service, American Railway Association, at Washington, has been appointed Auditor of Camps, of the International Lumber Company, International Falls, Minn.

H. M. Pratt, manager of the branch office of the **Southern Iron and Equipment Company** at New Orleans, La., has been appointed general sales manager with headquarters at Atlanta, Ga. **A. C. Wood** succeeds Mr. Pratt at New Orleans.

The Southwark Foundry & Machine Company, Philadelphia, Pa., has opened a district office at 804 Swetland building, Cleveland, Ohio, under the management of its representative, **Stewart Bolling**, who has served for seven years as engineering salesman for this company.

H. J. DeLaney, formerly railroad representative at Houston, Tex., of the **United States Rubber Company**, New York, has been appointed special railroad representative of its Southern division, in charge of the railroad business at its New Orleans, Birmingham and Houston branches.

The National Malleable Castings Company, Cleveland, Ohio, has bought the draft gear business, assets and goodwill, as of January 1, 1921, of the **Butler Drawbar Attachment Company**, Cleveland. The business of the latter company has been transacted for many years through the **National Malleable Castings Company**.

W. J. Roehl, whose appointment as sales representative in the St. Louis, Mo., district for **A. M. Castle & Co.**, Chicago, was announced in the *Railway Age* of March 4, entered the railroad business on May 4, 1906, as a clerk in the office of the supply agent of the Missouri Pacific. In May, 1910, he was promoted to chief clerk, remaining in that position until March 1, 1913, when he was promoted to chief clerk to general purchasing agent. On June 1, 1918, he was appointed assistant purchasing agent on the same road, holding that position until January 31, 1921, when he resigned to enter the service of **A. M. Castle & Co.**, as above noted. Mr. Roehl's headquarters are at 1946 Railway Exchange building, St. Louis.



W. J. Roehl

William P. Wescott, district manager at New York of the **Galena Signal Oil Company**, Franklin, Pa., has been elected also treasurer and a director. He succeeds as treasurer, **J. French Miller**, who was secretary and treasurer, Franklin, Pa., and is now secretary; he succeeds as director **E. V. Sedgwick**, New York, who has resigned.

At the annual stockholders' meeting of the **H. Channon Company**, the number of directors was increased from 5 to 7, and **Geo. E. Scott**, vice-president of the American Steel Foundries, and **F. C. Honnold**, president of the Chicago & Big Muddy Coal Company were added. The officers and the other five directors were re-elected.

The Power Equipment Company, 131 State street, Boston, Mass., has been appointed New England representative of the **Conveyors' Corporation of America**, Chicago, for the sale of its American trolley carrier monorail conveying equipment, and **Colwell & McMullin**, 79 Milk street, Boston, are the New England representatives for its American steam ash conveyor.

On March 1, the **Locomotive Superheater Company**, New York, changed its name to the **Superheater Company**. For years the Locomotive Superheater Company has served the steam railroads of the world, and necessity for greater conservation of fuel in other fields has resulted in the expansion of its organization to serve the marine and all fields where steam is used for power. Through the application of **Elesco** superheaters, railroad shop plants, industrial plants, public utility operations and excavating equipment are operating more effectively and more economically. The development of feed water heating equipment for locomotive and marine use has further broadened the activities of the company, and it was felt that with this expansion, the name of the organization was inadequate.

Bucyrus Company

Net earnings of the **Bucyrus Company**, Milwaukee, Wis., for 1920 were \$1,010,984, against \$982,563 in 1919. There was carried to surplus \$530,984, bringing that item to \$3,113,606. The income account for the year and balance sheet as of December 31 with comparisons, follow:

INCOME ACCOUNT		1920	1919
Net earnings after interest and taxes.....		\$1,010,984	\$982,563
Dividends		480,000	220,000
Surplus		580,984	762,563
Previous surplus		2,582,621	1,820,058
Total surplus		3,113,606	2,582,621
BALANCE SHEET—ASSETS			
Cash		567,083	249,483
Accounts and bills receivable.....		1,764,076	1,745,885
Inventories		3,179,007	2,568,872
Liberty bonds, other securities.....		163,903	235,237
Property account		7,126,091	6,868,583
Total		\$12,800,163	\$11,668,060
LIABILITIES			
Preferred stock		\$4,000,000	\$4,000,000
Common stock		4,000,000	4,000,000
Accounts payable		624,673	355,403
Advance payments		296,367	53,342
Accrued dividends		210,000	70,000
Accrued taxes, reserved.....		555,516	606,693
Surplus		3,113,606	2,582,621
Total		\$12,800,163	\$11,668,060

New York Air Brake Company

The annual report of the **New York Air Brake Company** for the year 1920 shows sales of \$6,545,846 compared with \$3,551,667 in 1919. Total income including profits from sales was \$1,779,315 compared with \$1,665,000 in the preceding year. These figures are equal to \$7.51 and \$6.24 respectively earned on the capital stock in each year.

After the payment of dividends on the capital stock the company reported a deficit for the year of \$222,017, but this does not include depreciation in inventory which was deducted from the profit and loss surplus, thereby reducing that account from a total of \$6,054,168 at the close of 1919 to \$4,047,628 at the end of 1920. The writeoff for inventory loss amounted to \$1,534,522 and in addition \$250,000 was written off for contingent services.

President **Charles A. Starbuck** in his report says:

"Owing to the stringency in the money market during the past year, the railroads were not able to purchase very large amounts of new equipment, and, while our sales were nearly double the year before, over one-half of the amount was for repair parts which the railroads were compelled to purchase to keep their trains in operation.

"You will note that provision has been made for federal taxes, reserve for depreciation and an additional substantial reserve for contingencies, and further that a very large amount has been written off various assets to meet the present-day deflated condition.

"Your property has been maintained in the highest state of efficiency, and liberal allowance expended for maintenance and repairs.

"The indebtedness to banks for borrowed money has been decreased substantially \$2,000,000 during the past year, and this has been accomplished largely through the reduction of merchandise inventories.

"Now that the Winslow bill has become a law and the railroads are receiving the money due them from the government we expect that they will soon place orders for large amounts of new equipment."

American Locomotive Company

The unfilled orders of the American Locomotive Company on December 31, 1920, as shown by its annual report, amounted to \$24,270,702 as compared with a total of \$8,999,921 at the close of 1919. Of the unfilled orders, about 64 per cent was for domestic work and 36 per cent for foreign business, while in the previous year 32 per cent was domestic and 68 per cent foreign.

The gross earnings for the company in 1920 amounted to \$66,884,613 as compared with \$70,073,582 in 1919. After deducting from the gross earnings \$58,137,473 for the cost of manufacturing, maintenance, administrative expenses, interest on bonds of constituent companies and an allowance for depreciation of \$1,326,811 on all classes of property there remained a gross profit for the year of \$8,747,140 from which has been deducted an allowance of \$1,636,014 for estimated United States and Canadian income and profits taxes, the remaining balance of \$7,111,126 being the available profit for the year. Dividends of seven per cent on the preferred stock and 6 per cent on the common, amounting to a total of \$3,250,000, were paid during the year. There remained a surplus of \$3,861,126 from which \$2,000,000 was reserved for additions and betterments to the present plants of the company and \$1,861,126 was credited to surplus.

President Andrew Fletcher in his report to the stockholders said: "The available profit for the calendar year was 10.6 per cent on gross earnings in comparison with 13.5 per cent for the calendar year 1919. An amount equal to \$21.45 per share was earned on the common stock of the company after providing for the regular \$7.00 per share on the preferred stock.

"For the future extension of the company's business it was decided to obtain property for a plant in the midwest section of the country and after careful consideration the St. Louis, Missouri, industrial district was decided upon as being a very advantageous location, not only because of the great number of railroads centering there, but also from the fact that it has been estimated that approximately 80 per cent of the materials entering into the manufacture and construction of locomotives and their tenders can now be obtained within a comparatively small radius of miles of that section. The company therefore negotiated the purchase before the close of the year of approximately 160 acres of land in the St. Louis district for the proposed plant. It is not at present the intention of the company to proceed with the erection of the plant and building operations will be deferred until general business conditions of the country become more stable.

"The excess of current assets over current liabilities December 31, 1920, was \$37,318,565. There has been included in current liabilities a reserve of \$1,911,538 to provide for current shrinkage in value of notes and bills receivable carried as current assets, and for the estimated loss at the prevailing discount on December 31, 1920, which would obtain in converting to United States dollars that part of the net working capital of the Montreal Locomotive Works which is expressed in Canadian dollars on the balance sheet of the Montreal Locomotive Company.

"The reserve of \$5,970,422 in current liabilities set up for accruals for United States and Canadian income and profits taxes, is, we believe, sufficient to provide for any differences in interpretation of the laws by the Internal Revenue Departments of both countries.

"The company has no bills payable outstanding and of the \$8,685,186 cash on hand on December 31, 1920, a considerable part of it since the first of the year has been invested in United States Treasury 5½ per cent certificates.

"The amount of materials and supplies of inventory account together with work in progress December 31, 1920, was \$14,609,096 in comparison with \$7,170,805 as of December 31, 1919. The materials and supplies have been valued at cost or market price whichever was lower.

"The prospect in the immediate future of orders for equipment

of any appreciable volume is not promising. The unsettled general business conditions of the country at this time with the consequent drop in traffic on the railways, the conditions of railway finances, of labor and of materials are not conducive to any great amount of purchasing on the part of the railroads; however, it is a fact, that the effective equipment of cars and locomotives of the railroads of the United States has not kept pace the past few years with the natural growth and development of the country."

CONDENSED INCOME ACCOUNT OF THE AMERICAN LOCOMOTIVE COMPANY. MONTREAL LOCOMOTIVE WORKS, LIMITED, AND AMERICAN LOCOMOTIVE SALES CORPORATION COMBINED

	Twelve months ended Decem- ber 31, 1920	Twelve months ended Decem- ber 31, 1919
Gross earnings	\$66,884,613.18	\$70,073,581.93
Manufacturing, maintenance and administrative expenses and depreciation	58,043,172.51	58,115,819.50
Gross profit	\$8,841,440.67	\$11,957,762.43
Interest on bonds of constituent companies, etc.	94,300.77	228,189.02
	\$8,747,139.90	\$11,729,573.41
Deduct for United States and Canadian income and profits and taxes	1,636,013.60	2,235,304.32
Available profit	\$7,111,126.30	\$9,494,269.09
Dividends on preferred stock	1,750,000.00	1,750,000.00
Dividends on common stock	1,500,000.00	1,375,000.00
	\$3,861,126.30	\$6,369,269.09
Reserve for additions and betterments	2,000,000.00	4,000,000.00
Net credit to surplus account	\$1,861,126.30	\$2,369,269.09

Trade Publications

TAP DRILL SIZES.—A table of tap drill sizes for S. A. E. or A. S. M. E. machine tool standards has been prepared in pocket form by the Greenfield Tap & Die Corporation, Greenfield, Mass. Larger charts containing similar data and suitable for hanging in the shop for ready reference by the workmen, have also been brought out.

ACHIEVEMENT.—This is the caption of a folder being distributed by the J. G. White Engineering Corporation, 45 Exchange place, New York. It gives information about and illustrations of power developments, hydro-electric developments, transmission systems, and other important engineering projects in this and in foreign countries.

STEEL STRUCTURES FOR RAILROADS.—In a 12-page booklet issued by the McClintic-Marshall Company, Pittsburgh, Pa., are given views of a large number of structural steel buildings and bridges, fabricated and erected by that company for railroads in various parts of the country. Included among these are freight houses, shops, roundhouses, bridges, viaducts, and miscellaneous structures.

OIL DRIVEN AIR COMPRESSORS.—The oil engine driven air compressors manufactured by the Chicago Pneumatic Tool Company, are described and illustrated in bulletin 607, recently issued. The booklet opens with a short general description of the machine and the type of fuel required. This is followed by a condensed illustrated description of the important details of construction. One of the interesting features of the bulletin is a comparison of the cost of operating an oil engine compressor unit and the comparative cost of operating an equivalent sized steam driven compressor. The concluding pages are devoted to illustrations of the various types of machines with tables of sizes, weights, etc.

THE EASTERN REGION of the Pennsylvania Railroad in January broke all records for punctuality since the company resumed the management of its property last March. Of the total of 81,713 trains run 91.7 per cent arrived at destination on time and 95.8 per cent made schedule time. In January last year only 77 per cent of the trains were on time and 87.4 per cent of them made schedule time.

RAILROAD WORKMEN of various crafts at a number of places in the southern states announce that, throughout that region, a vote will be taken in the unions to see if a strike shall be ordered to support the strike of the employees of the Atlanta, Birmingham & Atlantic. Commissioner Chambers of the United States Board of Mediation, has tendered the services of that board as mediators in the strike on the A. B. & A.

Railway Construction

ATCHISON, TOPEKA & SANTA FE.—This company has authorized the construction of a blacksmith shop at San Bernardino, Cal., with dimensions of 80 ft. by 306 ft., to cost \$107,000. The company will also build a lavatory building at Needles, Cal., to cost \$22,500.

CHICAGO UNION STATION COMPANY.—This company will shortly accept bids for the construction of a 260 ft. viaduct at Madison street, Chicago. The company will also widen Canal street 40 ft., between Van Buren and Jackson streets, Chicago.

ILLINOIS CENTRAL.—This company contemplates building a passenger station at Gilman, Ill., replacing a structure burned recently. The company also contemplates the construction of passenger stations at Baton Rouge, La., and Grand Junction, Tenn., replacing facilities no longer adequate.

MISSOURI PACIFIC.—This company contemplates rebuilding its shops at St. Louis, Mo., which were recently destroyed by fire at a loss of \$150,000.

MONTANA RAILROAD.—This company has applied to the Interstate Commerce Commission for a certificate authorizing the operation of its recently constructed line of 6 miles.

SAN ANTONIO & ARANSAS PASS.—This company is adding a second story to its freight station at Yoakum, Tex.

ST. LOUIS-SAN FRANCISCO.—The Employees Hospital Association of the St. Louis-San Francisco contemplates the construction of a new 120-bed hospital at Springfield, Mo., replacing the present structure.

UVALDE & NORTHERN.—The Interstate Commerce Commission has denied this company's application for a certificate of public convenience and necessity for the construction of a line of 37 miles in the counties of Uvalde and Real, Tex., on the ground that the Commission cannot find in the record that degree of assurance of a reasonably successful enterprise which would warrant the issuance of a certificate.

WICHITA FALLS & SOUTHERN.—The Interstate Commerce Commission has issued a certificate authorizing this company to construct a line from Newcastle to Breckenridge, Tex., a distance of approximately 44 miles. Protests against the granting of the certificate were filed by the Eastland, Wichita Falls & Gulf, the Cisco & Northeastern, the Texas & Pacific, and the Gulf, Texas & Western, on the ground that the construction of the new line would reduce their revenues.

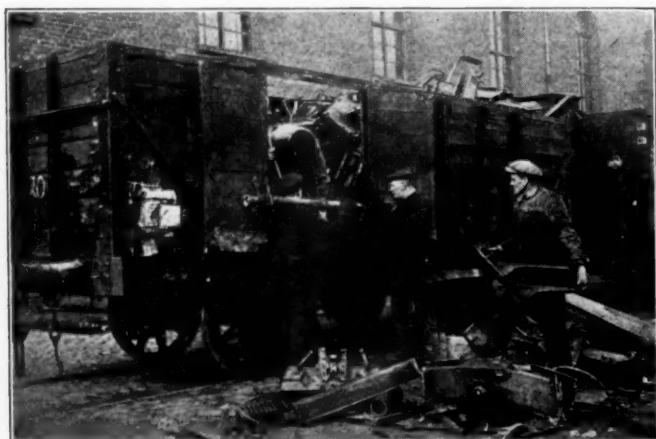


Photo by Underwood & Underwood

Parts of Big German Guns Being Shipped as Scrap to the Foundries in Accordance with Terms of the Treaty

Railway Financial News

ALABAMA & VICKSBURG.—*Loan Approved.*—The Interstate Commerce Commission has approved a loan of \$1,564,000 to this company to assist it in meeting its maturing indebtedness aggregating \$1,936,900, and in providing itself with additional locomotives at a total estimated cost of \$340,000. The carrier itself is required to finance about \$715,000 to meet the loan of the government.

BERGEN COUNTY.—*Asks Authority to Extend Bonds.*—This company has applied to the Interstate Commerce Commission for authority to extend for 10 years the maturity date of \$200,000 of first mortgage bonds maturing on April 1.

BUFFALO, ROCHESTER & PITTSBURGH.—*Bonds Paid.*—The \$1,300,000 6 per cent bonds due February 1, 1921, were paid off at maturity at the office of A. Iselin & Co., 36 Wall street, New York. The company obtained a government loan of \$1,000,000 to help it in meeting this maturing debt.

CENTRAL OF NEW JERSEY.—*Coal Company Dividend.*—The Lehigh & Wilkes-Barre Coal Company has declared a special cash dividend of 150 per cent on its \$9,210,000 stock outstanding. Of this dividend, amounting to \$13,815,000, the Central of New Jersey gets \$12,734,000 on the stock which it owns. The decision to declare the special dividend resulted from a necessity imposed on the Jersey Central by the Reading segregation of disposing of its Lehigh & Wilkes-Barre stock. By a modification of the Reading decree the coal company was permitted to declare any dividend warranted by its financial condition.

CHICAGO, MILWAUKEE & ST. PAUL.—*New Directors.*—Mortimer N. Buckner, of the New York Trust Company, and W. E. S. Griswold, of the Lima Locomotive Works, have been elected directors to succeed Percy A. Rockefeller and John A. Stewart, resigned, in compliance with the provisions of the Clayton Act.

CHICAGO, ROCK ISLAND & PACIFIC.—*Asks Loan from Revolving Fund.*—This company has applied to the Interstate Commerce Commission for a loan of \$1,905,000 for five years from the revolving fund, to pay off at maturity on October 1, 1921, a like amount of bonds of the Cedar Rapids, Iowa, Falls & North Western.

CHICAGO & NORTH WESTERN.—*Authorized to Issue Equipment Trust Certificates.*—This company has been authorized by the Interstate Commerce Commission to enter into a proposed trust agreement providing for the issuance of \$9,630,000 of equipment trust certificates, with interest at not exceeding 7 per cent, to be sold at not less than 97 per cent of par, for the purchase of equipment authorized by the board of directors to the amount of \$9,684,093.

DENVER & RIO GRANDE.—*Confirmation of Sale Deferred.*—Postponement of confirmation of the sale of this road until March 25, during which time the stockholders would be given an opportunity to purchase the road for \$10,000,000, has been ordered by Federal District Judge Lewis, of Colorado, sitting at Kansas City, Mo., with Federal Judge W. H. Sanborn. Judge Lewis announced the decision after an all-day hearing on an action to enjoin confirmation of the sale fixed by the court November 20 at \$5,000,000.

"It is ordered," the court instructed, "unless the stockholders shall make or cause to be made a deposit of \$100,000 with the clerk of the court, and also cause such depositary to consent in writing filed with the clerk, the said \$100,000 may be and shall be paid over to the receiver for the benefit of the property under administration if the depositary fails to bid and purchase the equities in the properties described in the master's sale for the sum of \$10,000,000 or more within twenty days after March 5, 1921. Unless no higher bid is made or accepted by the court the sale already made will be confirmed."

GAINESVILLE MIDLAND.—*Receivership.*—Gordon Carson and W. B. Veazey of Gainesville, Ga., have been appointed receivers. The road operates between Gainesville and Athens, 42 miles, with a branch line to Monroe, 32 miles. President George J. Baldwin recently said that the road would have to cease operations as a result of the refusal of employees to vote a reduction in their wages. Mr. Baldwin submitted the following statement to the employees:

The Gainesville Midland has lost in operating expenses over and above all income and revenue during the last twelve months, \$84,484.87, and this loss is continuing with no apparent prospect of improvement. Under these conditions, which have crippled the road, it is clearly apparent to everyone that unless immediate relief can be secured it can no longer continue to operate. We have no credit; no means of securing additional funds.

The wages of employees have increased from the sum of \$83,343.20 paid in 1917, to \$180,913.02 in 1920.

The principal owners of the road and mortgage creditors have indicated a willingness to defer any interest or income on the investment of over a million dollars in order to relieve the situation as far as they can.

The proposition is therefore made to the employees to devote all income from the operation of the road during this period to the payment of necessary operating expenses and to the wages of employees for the above period of six months, and to adjust payrolls on this basis.

This is the only possible way the road can continue to operate and we therefore urge your serious consideration and immediate acceptance of this plan.

NORFOLK & PORTSMOUTH BELT.—Asks Authority to Issue Notes.—This company has applied to the Interstate Commerce Commission for authority to issue \$63,900 of notes to the Baldwin Locomotive Works for new locomotives.

NORTHERN PACIFIC.—Forms Company to Develop Oil Lands.—This road has joined with experienced oil interests in creating a new concern known as the Absaroka Oil Development Company. George T. Slade, formerly vice-president of the road, will be president of the new company, which will take up and deal with all applications for leases received by the railway during the last few months. An announcement of these changes says:

It is the intention and desire of the new company so to develop the Northern Pacific lands as to promote the interests not only of the Northern Pacific, but as well of the states in which the lands are situated.

The Northern Pacific owns a substantial acreage of land and of oil and gas rights in parts of North Dakota, Montana and Wyoming, where there are possibilities of oil production. Preliminary investigations have disclosed some 35 so-called "structures" in these states where geological conditions indicate there may be oil and gas. Some of these structures have already been tested and in two locations oil has been produced in commercial quantity, namely, Elk Basin district, mostly in Wyoming, and the Cat Creek district, in the central part of Eastern Montana.

In order to handle its land and rights in the most intelligent and progressive manner and so as to further the development of the oil and gas resources of North Dakota, Montana and Wyoming, the Northern Pacific Railway Company has joined with interests experienced in the oil business in creating a company known as the Absaroka Oil Development Company. This company will be the medium through which the railway company will continue a thorough investigation of all the oil and gas possibilities of its land holdings and make explorations for its own account or lease to others the right to explore and develop. The company will have its main headquarters in New York City with an office in Billings, Mont., in charge of responsible managers and agents.

PENNSYLVANIA.—Annual Meeting.—The stockholders at their annual meeting in Philadelphia on March 8 approved, subject to a formal stock vote, the resolution authorizing the corporation to increase its indebtedness \$100,000,000 for such expenditures as the directors deem necessary. All leases of subsidiary lines presented to the meeting were also approved, subject to a stock vote, and the annual meeting was changed from the second Tuesday in March to the second Tuesday in April.

Annual Report.—The Pennsylvania Railroad's annual report is reviewed editorially in this issue.

Authorized to Issue Bonds.—The Interstate Commerce Commission has issued an order authorizing the issuance of \$60,000,000 of 15-year, 6½ per cent secured gold bonds which were recently sold, subject to the Commission's approval, to Kuhn, Loeb & Co., at 95.40, and also for the issuance of \$60,000,000 of general mortgage bonds at 6 per cent, to be pledged as security in part for the 6½ per cent bonds.

New Director.—Edgar C. Felton, of Philadelphia, has been elected a director to succeed Andrew W. Mellon, of Pittsburgh, resigned.

READING.—Call for Proxies.—A letter has been issued by the common stockholders' protective committee of the Reading Company, of which Seward Prosser, president of the Bankers Trust Company of New York, is chairman, calling for proxies and stating proxies have been received for about 300,000 shares. The committee has taken the position that the Reading Company's accumulated surplus of \$33,000,000 belongs to the common stockholders, and will support this contention at future hearings.

John L. Clawson, in a letter to William A. Law, president of the First National Bank and a member of the preferred stockholders' committee, objects to that section of the plan which provides for payment of \$10,000,000 to Reading general mortgage bondholders upon signing of discharge of coal company from lien of mortgage. Mr. Clawson says:

"If the \$10,000,000 to be paid should be used for the purchase of Reading bonds in the open market, it would relieve the railroad of at least \$400,000 a year interest which would accrue to the benefit of all the stock. The

mortgage would then be reduced by this amount, and the bonds which are to be received in additional consideration for releasing the coal stock, could be held by the trustees as security for the balance of the general mortgage bonds.

"In reference to the Reading Iron Company it will be found the decree states that the Reading company shall become a railroad company alone; therefore, this stock should be distributed among the holders in same manner as the coal stock. This would be a considerable advantage of great value to the present stockholders which you represent."

Intervention Sought.—The Penn Mutual Life Insurance Company as the owner of \$1,000,000 par of the Reading general mortgage 4 per cent bonds has filed a petition in the District Court of Philadelphia for leave to intervene in the Reading segregation plan for the protection of its rights in the distribution of the assets of the company. Because of its holdings the company states it is vitally interested in the distribution of the assets of the Reading Company. This is the first petition for intervention filed since the hearing on the plan on March 1. At that time Judge Buffington stated that all interests would be allowed two weeks to file petitions to intervene in the suit. The Prosser Common Stockholders Committee, the Iselin Preferred Stockholders Committee and the Central Union Trust Company of New York, trustee under general mortgage, are already on record as having intervened in suit.

SAVANNAH & ATLANTA.—Receivership.—C. E. Gay, Jr., president and general manager of this road, was appointed its receiver on March 4, by Judge Evans, of the United States District Court at Savannah, Ga. The petition for the receivership was filed by Theodore G. Smith and John B. Johnston, receivers for Imbrie & Co., of New York, who own a majority of the common and preferred stock of the Savannah & Atlanta. The financial difficulties of this banking firm forced it into the hands of receivers on March 3, and hence the receivership of the road, which was heavily indebted to it. The Savannah & Atlanta operates between Camak, Ga., and Savannah, 147 miles.

SEABOARD AIR LINE.—Authorized to Issue and Pledge Bonds.—This company has been authorized by the Interstate Commerce Commission to issue \$715,000 of first and consolidated mortgage gold bonds at 6 per cent, maturing September 1, 1945, and to pledge various securities with the Secretary of the Treasury as security for loans aggregating \$2,625,000 from the revolving fund.

ST. LOUIS-SAN FRANCISCO.—Not to Take Over A. B. & A.—E. N. Brown, chairman of the St. Louis-San Francisco, denies the road is negotiating to take over the Atlanta, Birmingham & Atlantic, with which it connects by subsidiary line at Birmingham.

VALDOSTA, MOULTRIE & WESTERN.—No Bids at Sale.—There were no bids made for this road when it was offered for sale at the upset price of \$165,000 at Valdosta, Ga., on February 22.

WASHINGTON & CHOCTAW.—Sale.—This 11-mile line has been sold to the Cochran Lumber Company, of Meridian, Miss.

WESTERN MARYLAND.—Authorized to Issue and Pledge Equipment Notes.—This company has been authorized by the Interstate Commerce Commission to issue \$1,500,000 of equipment gold notes, preferred series, and \$1,500,000 junior series, and to pledge the \$1,500,000 of the junior series with the Secretary of the Treasury as part security for a loan from the revolving fund. The notes are to represent the deferred payments on the purchase price of 40 freight locomotives now under construction by the Baldwin Locomotive Works.

WILLIAMSPORT & NORTH BRANCH.—Foreclosure Sale.—Holders of \$540,000 bonds of this company bought in the railroad property at the upset price of \$25,000 fixed by the court. There are holders of \$5,000 bonds who did not join in the purchase.

Dividends Declared

Kansas City, Ft. Scott & Memphis—Four per cent preferred, 1 per cent, quarterly, payable April 1 to holders of record March 25.

Lehigh & Wilkes-Barre Coal Company—Special cash 150 per cent, payable March 5 to holders of record February 28.

Lehigh Valley—Common, 1¾ per cent quarterly; preferred, 2½ per cent quarterly; both payable April 2 to holders of record March 12.

Minneapolis, St. Paul & Sault Ste. Marie—\$2, semi-annually, payable April 1 to holders of record March 19.

Northern Pacific—1¾ per cent, quarterly, payable May 2 to holders of record March 18.

St. Joseph, South Bend & Southern—Common, 1 per cent, quarterly; preferred, 2½ per cent, quarterly; both payable March 15 to holders of record March 11.

Western Pacific—Preferred, 1½ per cent, quarterly, payable April 1 to holders of record March 18.

Railway Officers

Executive

Henry Ford has been elected president of the Detroit, Toledo & Ironton, succeeding **J. A. Gordon**, who will remain on the board of directors.

C. H. Drazy, assistant to the vice-president of the Illinois Central, has resigned, effective March 1, to engage in the automobile accessory business.

Charles Hicks, formerly general manager of the Tennessee, Alabama & Georgia, and who since December 15 has been temporary receiver of that company, was, on February 5, appointed permanent receiver.

Financial, Legal and Accounting

H. B. Crane, chief clerk to the president of the Chicago, Indianapolis & Louisville, has been promoted to cashier, with headquarters at Chicago.

W. E. Kennedy, auditor capital expenditures of the Louisville & Nashville, with headquarters at Louisville, Ky., has been promoted to assistant controller, succeeding **G. W. Lamb**, who has resigned, effective March 1. Mr. Kennedy will continue to have jurisdiction over the auditor capital expenditures department.

Operating

J. A. Gleason, special assistant to the general manager of the Chesapeake & Ohio, has been appointed superintendent of telegraph, with headquarters at Richmond, Va., effective February 15.

Traffic

D. R. Peck has been appointed general agent of the Kansas, Oklahoma & Gulf, with headquarters at Chicago, effective March 1.

M. Broadbuss has been appointed commercial agent of the Norfolk & Western, with headquarters at Ft. Worth, Tex., effective February 16.

F. S. Olds has been appointed general live stock agent of the New York, Chicago & St. Louis, with headquarters at Cleveland, O., effective March 1, succeeding **W. L. Ryan**, deceased.

D. S. Romney has been appointed assistant to the general manager of the Utah-Idaho Central, with headquarters at Ogden, Utah, effective March 15, succeeding **E. F. Muller**, who has resigned.

G. A. Howard has been appointed chief dispatcher of the Brownville division of the Canadian Pacific, with headquarters at Brownville Junction, Me., succeeding **J. H. Todd**, transferred, effective March 4.

J. E. Hutchinson, commercial freight agent of the Western Maryland, with headquarters at Minneapolis, Minn., has been transferred to a similar position with headquarters at Cleveland, O., effective March 1. **C. C. Gray** succeeds Mr. Hutchinson at Minneapolis.

H. P. Hathaway, division freight agent on the Chesapeake & Ohio, with headquarters at Chicago, has been promoted to assistant general freight agent, with the same headquarters, succeeding **William Fitzgerald**, who has resigned. **F. J. Vanderblue** succeeds Mr. Hathaway.

Engineering, Maintenance of Way and Signaling

J. A. Gorr, division engineer of the Shreveport division of the Louisiana lines of the Southern Pacific, has been transferred in a similar capacity to the Lafayette division, Lafayette, La., succeeding **J. A. Lambert**, resigned.

C. T. Jackson, whose promotion to principal assistant engineer of the Chicago, Milwaukee & St. Paul, with headquarters at Chicago, was announced in the *Railway Age* of March



C. T. Jackson

4 (page 534), was born at Miami, Mo., on July 13, 1881, and graduated from the University of Missouri in 1903. He entered railway service in the same year as an instrumentman on the Montana Railroad, being employed in the construction of the road's Harlowtown and Lewistown line. When the Montana Railroad was purchased by the Chicago, Milwaukee & St. Paul, Mr. Jackson remained in the employ of the latter company, and from 1905 to 1909 served as assistant engineer and locating engineer, with headquar-

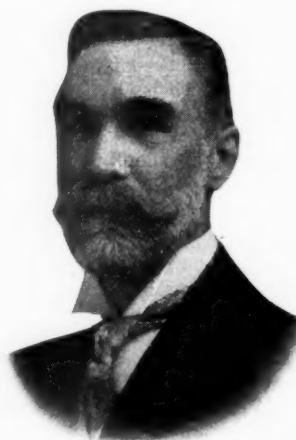
ters at Helena and Butte, Mont., being engaged in the construction of the Coast extension of the St. Paul. In 1909 and 1910 he was assistant engineer on the LaCrosse division, with headquarters at Sparta, Wis. In 1910 he was appointed locating engineer, and served in both that capacity and as district engineer until 1915, being engaged in building the line from Lewistown to Great Falls, Mont. In 1915 he was appointed pilot engineer in connection with valuation work, and district engineer with headquarters at Butte, Mont., and later at Chicago. He was serving in the latter capacity at the time of his recent promotion.

Obituary

J. G. Walker, chief dispatcher of the Houston division of the Texas lines of the Southern Pacific, died at San Antonio, Tex., on February 28.

C. G. Hedge, formerly vice-president of the Missouri, Kansas & Texas, died at Garden City, Long Island, on March 6, at the age of sixty-nine.

C. W. Hillard, vice-president of the St. Louis-San Francisco, died at his home in New York on March 8. Mr. Hillard was born in England in 1855. He came to this country in 1876



C. W. Hillard

and entered railway service as private secretary to the president of the Chicago, St. Paul & Minneapolis (later absorbed by the Chicago & North Western). He was later appointed assistant secretary of this road and continued in this capacity until 1882. In 1885 he became secretary and treasurer of the Chicago & Indiana Coal Railway. When this road was absorbed by the Chicago & Eastern Illinois in 1887, Mr. Hillard became vice-president and treasurer of the latter company. When this road came under the control of the

Chicago, Rock Island & Pacific in 1906 he became fourth vice-president of the Rock Island. From 1907 until his death Mr. Hillard was vice-president of the St. Louis-San Francisco.